# The RUBBER AGE

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# TAKE INITIAL STEPS AT MEETING IN AKRON TO OFFSET HIGH CRUDE PRICES

## Consider Reduction of Types and Sizes and Elimination of Second Quality Lines as well as Postponement of Spring Shipments—Committee to Confer with Netherlands

**That the high price of crude rubber has caused considerable consternation in the rubber industry and that executives have been stirred into action by recent increases was shown by a meeting of directors of the Rubber Association of America in Akron, June 11 at which remedial measures were discussed and a committee appointed to confer with the Dutch Government with a view to the investment of American capital in Dutch plantations.**

W. O. Rutherford, president of the Rubber Association and vice-president of the B. F. Goodrich Co., called the meeting. Aware that their acts would involve vital trade relations between the United States, Great Britain and Holland and would have a far-reaching effect, not only on the world's automotive industry, but in the Far East as well, the directors debated all day before issuing a statement explaining their stand.

The meeting was coincident with a visit to Akron by Dr. A. C. D. Jonkherr de Graeff, minister to the United States from the Netherlands. Dr. de Graeff was the official guest of Harvey S. Firestone, and attended a dinner given at Harbel Manor at which the heads of Akron rubber companies were present.

*Seek to Reduce Inventories*

At the Akron meeting definite action was taken looking to the reduction of excessive inventories now being carried by manufacturers and dealers by these names:

*1. By substantial reduction of the number of types and sizes of tires, footwear and mechanical goods.*

*2. By the abandonment of all interchangeable balloon tire sizes.*

*3. By the elimination of all second quality lines of tires.*

*4. By postponing for five months the solicitation of orders for spring dating, no shipments on such orders to be made before 1926.*

Reclaimed rubber, the larger use of which was recently advocated by Herbert Hoover, Secretary of Commerce, is to play an important part in this program. It is thought that 2,000,000 lb. of additional reclaimed rubber will shortly be available.

At the Akron meeting were besides President Rutherford, F. A. Seiberling, president of the Seiberling Rubber Co.; G. M. Stadelman, president of the Goodyear Tire & Rubber Co., Wm. F. Pfeiffer,

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## DUTCH GROWER SELLS FIVE YEARS FORWARD

British growers collectively produce by far the greater part of the world's rubber, yet there are individual Dutch companies far larger than any British companies. An example is the Amsterdam Rubber Plantations Co., which has just issued its report for 1924. This concern's output is much greater than that of any British concern. Its total crop of rubber last year was 11,634,168 lbs., equal to 349 lbs. per acre. For the current year the output is estimated at 11,900,000 lbs. The 1924 crop produced a profit of $1,964,980 and the total profit was $2,243,175, making, with $542,700 brought in, a total of $2,785,875.

Already the concern has sold forward about 10,000,000 lbs. of this year's output, 6,200,000 lbs. at 1s. 3d. (30 cents), and the rest on more favorable terms. About 7,500,000 lbs. of the 1926 crop has also been sold forward, of the 1927 and 1928 crops nearly 7,000,000 lbs., and of the 1929 crop about 5,500,000 lbs. The bulk of the rubber has been sold to the General Rubber Co.

## To Hold Conference June 25

A crude rubber conference will be held on June 25 at the Boston Yacht Club at which time the formation of a "New England Rubber Manufacturer's Association" will be discussed. Among those who will attend the conference are Warren MacPherson, treasurer, Cambridge Rubber Co.; Hugh Bullock, treasurer of the Converse Rubber Shoe Co.; Dr. John R. Johnson, director of tropical research for the United Fruit Co.; and Quincy Tucker, who was instrumental in arranging the conference.

## Plants Shut Down

The Alice Mill of the Woonsocket Rubber Co. in Woonsocket, R. I., and the plant in Millville, Mass., of the same concern will close June 25 for three weeks, it was announced. About 220 employees are affected. The plants are subsidiaries of the United States Rubber Co.


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## TAKE STEPS TO OFFSET HIGH PRICE OF CRUDE

*(Continued from Preceding Page)*

secretary and general manager of the Miller Rubber Co., H. Stuart Hotchkiss; H. C. Viles of New York, secretary of the Rubber Association; C. C. Gates of the Gates Rubber Co.; E. B. Germain, manager of the American plant of the Dunlop Tire & Rubber Co., Buffalo; Harry Dunn of the Fisk Rubber Co.; H. E. Sawyer of the U. S. Rubber Co.; J. C. Weston of the Ajax Rubber Co.; George E. Hall of the Boston Woven Hose & Rubber Co.; A. L. Scheuer of the Kelly-Springfield Tire Co.; George B. Dryden of the Dryden Rubber Co.; Fred C. Hood of the Hood Rubber Co.; and Charles E. Stokes of the Home Rubber Co.

John Lowman, president of the Philadelphia Rubber Co., declared that the consumption of reclaimed rubber had shown an increase this year, but in his opinion the increase was due not so much to the substitution of reclaimed for crude rubber, but because of the increased production which has called for the consumption of a greater percentage of both reclaimed and crude rubber. He did say, however, that he believed formulas could be changed to permit a greater use of reclaimed rubber.

Reduction of inventories resulting from the policy of retrenchment advocated by the directors, it is believed will eliminate the carrying of more than a minimum amount of high priced rubber, which has risen to 78 cents from 17 cents a pound last year.

*Balloon Policy Will Mean Saving*

Abandonment of the interchangeable balloon tire sizes will be a big saving as the balloon tires will be manufactured only for the standard size wheel specially designed for carrying them.

The plan of manufacturing and shipping "as you go" instead of dating orders six months ahead of time as the practice of "spring dating" is called, is expected to be another good move towards economy and conservation.

W. O. Rutherford, F. A. Seiberling, G. M. Stadelman and Wm. F. Pfeiffer form the committee appointed to negotiate with Dutch officials in an effort to work out a plan to effect a permanent relief from the British monopoly.

The decision reached at the meeting to foster a campaign for increased production in the Island of Java and other Dutch possessions, which are producing 40 per cent of the world's crude rubber and are not governed by restriction, is the direct result of the high price of crude rubber caused by the Stevenson Restriction Plan. Production in Netherlands India has steadily increased from 1912 when 2,025 tons were produced. Production in 1924 was 175,298 tons. Java has its own labor supply which is ample save for occasional temporary, seasonal shortages.

Ministers of the Netherlands Government have assured American rubber manufacturers that their Government desires to co-operate in furnishing their crude rubber requirements at a price which will be fair to the growers and not burdensome to the consumers. Negotiations with the Dutch Government, designed to break the virtual monopoly of the world's crude rubber supply by the British, are to be begun immediately.

**Twenty-Nine Per Cent of the World's Rubber Production is Grown in the Netherlands-India (Sumatra, Java and Borneo)**

*Issue Statement*

Following the Akron meeting, F. A. Seiberling, who was very active in bringing before the board many facts bearing on the present situation, issued the following statement:

"The seriousness of the situation represented by the prevailing high price of crude rubber and the determination on the part of the rubber goods manufacturing industry to do everything possible to protect the interests of the American consuming public was indicated by the fact that the directors of the Rubber Association of America, Inc., met in Akron to discuss remedial measures.

"A careful survey of the industry situation indicated that vigorous action along the line of conservation practices can be taken without adversely affecting service to the public.

"Definite action was taken to reduce excessive inventories now being carried by manufacturers and dealers; first, by substantial reduction in the number of types and sizes of tires, footwear and mechanical goods; second, by the abandonment of all interchangeable balloon tire sizes; third, the elimination of all second quality lines of tires; fourth, postponing for five months solicitation of orders for spring dating, no shipments on such orders to be made before 1926.

"The art of reclaiming rubber having been greatly advanced through improvement in quality, permitting its wider use, and as additional capacity in excess of 2,000,000 pounds monthly will be available within the next sixty days, and as plans for larger further extensions are under way, it is believed that the present distressing situation will shortly be relieved. A committee was appointed to confer with the Dutch Government with the end in view of arranging satisfactory terms for the investment of American capital in growing of rubber in Dutch possessions."

## To Sell British Plants

The plants and machinery of the Beldam Tyre Co., Ltd., of Windmill Road, Brentford, Middlesex, England, and the Standard Tyre & Rubber Manufacturers, Ltd., Alperton, near Wembley, Middlesex, England, are to be offered for sale at public auction by Leopold Farmer & Sons, at the London Auction Mart, 155 Queen Victoria Street, London, E.C.4, Wednesday, July 15th, unless previously disposed of. The plant of the Beldam Tyre Co., Ltd., covers 3½ acres and is equipped with modern rubber machinery, has a floor area of 90,000 square feet with electric power. It is ready for immediate operation.

The Standard Tyre & Rubber Manufacturers, Ltd., has an area of 14 acres, with a frontage to the Grand Junction Canal and adjoins Alperton Station. Its buildings are modern, with floor space of 70,000 square feet.

Both plants are equipped to manufacture pneumatic tires, tubes, solid tires and rubber goods.

## Fire Damages I.T.S. Plant

Fire in the factory of the I.T.S. Rubber Co., 26 Alpine Ave., West Toronto, Canada, caused a heavy loss before it was extinguished. The damage was placed at $5,000 to the building and $16,000 to stock. The damaged structures included the warehouse and the factory, which are two-story brick buildings.

## Vanderbilt's Foreign Agents

In our issue of June 10 we announced that the R. T. Vanderbilt Co., Inc., 50 East 42nd St., New York had appointed the Anchor Chemical Co. of Manchester, England, as their agents for the United Kingdom. At that time mention should also have been made of the other Vanderbilt European agents which are as follows: for France, W. Van Lede, 17 Place de la Madeleine, Paris; for Germany, Lehmann & Voss, Bieberhaus, Hamburg 1, Germany.

## ATTRIBUTES HIGH PRICES TO LACK OF NEW ACREAGE

In spite of the 300 per cent increase in crude rubber prices in the last 12 months, tire prices have gone up less than 10 per cent, L. C. Rockhill, general sales manager of the Goodyear Tire & Rubber Co., points out in an analysis of the tire situation.

"Tire prices are still 48 per cent lower than they were in 1920 and 42 per cent lower than pre-war prices," he said.

"Indeed, until the two small increases this spring they were lower than they have ever been in the history of the tire industry.

"This figure, of course, does not take into account the fact that tires today give their owners four or five times as much mileage as they did before the war. As a matter of fact the automobile owner's dollar expended for tires will go more than five times as far today as it did then. There is probably no purchase that he can possibly make of any kind where he gets fuller value for his money as compared to pre-war prices than in automobile tires.

"Taking commodities as a whole, we find the American public paying 56 per cent more on the average than it did in 1914.

*All Raw Materials Are Higher*

"The fabric that goes into tires is 75 per cent higher than it was in 1915. Rubber is today eight per cent higher than it was in 1914. And tires are 42 per cent lower than they were in that year.

"Crude rubber today is the largest single factor entering into the cost of tires, larger than the cost of fabric, of labor, of compounds, of the overhead which represents investment in plants and machinery. Indeed at the present prices it is almost as large as all these combined."

Rockhill does not agree with those who attribute the shortage to the British restriction act. At least, he says in his statement that the fundamental reason for the recent increase in crude rubber has been the fact that planting of new areas has almost entirely stopped since 1920 in the face of an increased consumption, amounting in 1924 to 50 per cent over 1920.

*Facts Point to Shortage*

With no planting being done, and the consumption of rubber increasing—increasing rather rapidly within the last year, with the recovery of the rubber industry in Europe, and the great development of automobile busses and the popularity of balloon tires, it is obvious that whatever surplus there was in 1920 would sooner or later be consumed and that we would come into a period of shortage.

The American public has enjoyed a period of exceptionally low tire prices in the last five years. One important factor in that was that rubber was sold during that time practically at the cost of production in well-managed plantations which were in full bearing, or actually below production costs in many cases.

It is obvious that new planting would not be done as long as rubber growers were raising rubber at a loss or merely breaking even, and as a consequence the price of rubber has swung back to about the level it occupied from 1913 to 1919.

## Pays Extra Dividend

The American Cyanamid Co., New York, has declared an extra dividend of ½ per cent on the common stock in addition to the regular quarterly dividend of 1 per cent. The regular dividend of 1½ per cent was also declared in the preferred. These dividends are payable July 1 to stockholders of record June 15.

## BAILEY RUBBER PLANT SOLD TO F. J. GLEASON

F. J. Gleason of the Gleasonite Products Co., Brockton, Mass., has purchased the factory and machinery of the Bailey Rubber Co., Beverly, Mass. The transaction was an individual one and apart from the firm.

Mr. Gleason stated that he had not decided just what would be done with his acquisitions, whether the building in Beverly would be sold or whether he would move the machinery to Brockton. It will not in any way affect local production, he stated; in fact the company is planning to increase its local output.

The purchase was made at an auction ordered by J. J. McCarthy of Salem, trustee in bankruptcy.


# ON JUNE 2nd, 1925

## SECRETARY HOOVER SAID:

"The high price of imported Crude Rubber makes profitable the chemical reclamation of much larger amounts of used rubber for re-use, and previous experience indicates that our domestic consumption can be supplied up to 40% from this source instead of 20% which maintains when rubber is below 35c per lb. The manufacturing capacity for increased rubber reclamation is ample and under present price levels should contribute to reduce the volume of American imports."

# ON MAY 1st, 1925

## WE SAID:

"All statistics point to a shortage of Rubber NOW. The figures are there for all to see. Even with a nominal advance in the price of finished articles while this condition lasts, what is the American Rubber Manufacturer to do? Is the continued high quality of our rubber products to be imperiled by the cold law of necessity? No—because in place of drugs and chemicals, your Reclaiming Industry is tuned up as never before to give you an adequate, constant, uniform supply of high-grade Reclaimed Rubber, which is available right at your receiving door.

There is no shortage of Reclaimed Rubber. There has been no advance in its price comparable with Crude. THERE HAS BEEN A PHENOMENAL ADVANCE IN ITS VALUE.

We are fully prepared to co-operate in demonstrating that

AMERICA SHOULD USE ITS OWN RECLAIMED RUBBER."

*Never has the value of Reclaimed Rubber even approached what it is now.*

**U. S. RUBBER RECLAIMING CO., Inc.**

**100 E. 42nd. St., N. Y. Factories: Buffalo, N. Y.**

"42 *Years Serving the Industry Solely as Reclaimers.*"

## BALLOON PRODUCTION INCREASES IN APRIL

Production of cord tires in April was 1,816,641, compared with 2,939,000 in March, according to reports received from 50 companies by the Rubber Association. Inventory was 4,035,061 against 4,369,673 and shipments were 2,012,794, against 1,708,352 in March. Production of balloon tires in April was 1,626,369, against 1,217,367; inventory was 1,080,594 against 926,303 in March; and shipments were 1,448,974, compared with 1,168,277 in March. Although balloon tires production showed a slight increase, production of fabric tires showed a decline. In April 562,449 tires were produced against 738,625 in March; inventory was 1,700,699, against 1,836,228; and shipments were 661,907 compared with 616,350 in the previous month.

Production of high pressure tubes was 3,259,524 in April, compared with 3,895,668 in March; inventory was 8,726,603, against 9,540,993 in March; and shipments were 3,556,258, against 3,120,624 in the previous month. Production of balloon tubes was 1,879,007 in April, compared with 1,354,434 in March; inventory was 1,486,546, against 1,135,649; and shipments were 1,471,976, compared with 1,162,910 in March. Production of solid tires in April was 51,898; inventory, 134,531; and shipments, 57,067. Production of cushion tires was 14,161; inventory, 31,858; and shipments 13,883 as reported by ten companies.

Consumption of cotton fabric in tires was 14,902,337 lbs., compared with 15,040,609 lbs. in March. Consumption of crude rubber in tires and tubes was 48,154,633 lbs., against 46,365,630 lbs. in March. Consumption of gasoline was 810,849,075 gals. Production of passenger cars was 291,391 cars, and trucks, 47,664.

## W. O. Rutherford Sails

W. O. Rutherford, president of the Rubber Association of America and vice president of the B. F. Goodrich Co., Akron, recently sailed for Europe on the *Leviathan*. He expects to be gone about ten weeks. During his trip he will attend the sessions of the International Chamber of Commerce at Brussels and consult with rubber authorities in France, Great Britain and Germany.

## AZO Stocks in Trenton

The New Jersey Zinc Sales Co. is now carrying stocks of Zinc Oxide and Albalith in Trenton, N. J., at the Anchor Warehouse, New York and Olden Avenues.

## *CREPE SOLED SHOES IN DEMAND*

**Wholesalers are said to be doing a large business in crepe soled shoes. Much cheap material is being put out, however, and the better grade shoes are being tagged by the sellers with a "first quality" label for protection. The cheap soles are said to lack tensile strength, with the result that the stitches pull out easily.**

## H. S. Hotchkiss Returns

"The outlook is very favorable for the U. S. Rubber Co." said H. Stuart Hotchkiss, vice president, returning from a six months' trip to the company's rubber plantations.

"In Sumatra and the Malay Peninsula we have at present about 110,000 acres. Of this amount 72,000 acres are planted and 75,000 acres will be planted by close of the year. The total producing area of U. S. Rubber is about 50,000 acres and production will amount to about 18,000,000 pounds annually. I think few people realize what a wonderful asset U. S. Rubber has in these plantations.

"From a study of the London markets I am convinced we shall see high-priced rubber for some time and that if conditions are not radically changed we will see a shortage of rubber a few years hence. We need some plan that will keep the bottom from being knocked out of the rubber market yet will stabilize it so that investors will get a fair return. An investor should get between 15 and 20 per cent on an investment of this kind because of the risks which are so great in tropical plantations that large acreages of rubber may be wiped out almost overnight from floods, disease or other causes. For a 15 per cent to 20 per cent return, rubber should sell around 1s. 6d. a pound, or about 35 cents. The Stevenson plan has been so regulated that rubber should sell for around 35 cents. And if users were taking advantage of the Stevenson plan, the price would not be at present levels."

## Rubber Apparatus Patented

Albert H. Bates, inventor of an apparatus for making hollow rubber articles recently granted U. S. Patent No. 1,540,872, has assigned the patent to Paramount Rubber Consolidated, Inc., Tuckahoe, N. Y. The apparatus combines a mold having a set of cavities each provided with a surrounding edge, vents leading from the respective cavities to a common discharge, and a valve carried by the mold controlling the discharge.

## TEMPORARY RECEIVER APPOINTED FOR BOURN

Under a decree entered by Presiding Justice Willard B. Tanner in Superior Court Zenas W. Bliss was appointed temporary receiver of the Bourn Rubber Co., Providence, R. I., and receiver's bond was fixed at $25,000. The receiver is authorized to take charge of the company's plant and continue its operation.

The receiver was appointed upon petition of Stephen W. Bourn, stockholder and creditor, who alleged the concern is unable to pay debts as they become due and payable in the ordinary course of business.

Under the terms of the decree the receiver is authorized to take possession of the plant and operate it during the pendency of the receivership petition, make payment of the weekly payroll the payment not to exceed $75 to any one person, and the receiver is authorized to borrow not to exceed $25,000 at any one time and the interest not to exceed 6 per cent, as in his opinion shall be deemed necessary. Creditors, under the decree, are enjoined from bringing suit against the concern during the pendency of the petition.

According to the petition the Bourn Rubber Co. has capital stock issued and outstanding of 920 shares of par value, $100 each.

## To Finance American Firm

Presiding at the recent annual meeting of Callender's Cable & Construction Co., Ltd., in London, Sir J. Fortescue Flannery, Bart., M. I. C. E. (the chairman), stated that during the past year many suggestions were received from the United States as to the desirability of their opening a branch there to meet the vast growing demand for super-tension mains, as cables to work satisfactorily at 33,000 volts are now being urgently called for.

After lengthy negotiations an agreement has been come to with the Okonite Co., an American cable maker, to form the Okonite-Callender Cable Co. under the laws of the state of New Jersey, and to erect on joint account a large new factory in the States especially designed for the purpose. A series of buildings has been secured in Paterson, New Jersey, and plant and machinery are now being constructed.

In view of the financial requirements of the American enterprise, the British Callender Co. is increasing its capital to £1,500,000 ($7,500,000) by the creation of 200,000 additional Ordinary shares. One-half of these are being allotted to existing stockholders.

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# RUBBER RECLAIMING INDUSTRY READY TO DOUBLE PRODUCTION IF NECESSARY

## Entire Rubber Industry Looks to Reclaimers to Increase Facilities to Take Care of Greater Demand—Opinions of Reclaimers on Herbert Hoover's Statement

Following closely on the heels of Herbert Hoover's statement that "...the high price of crude rubber makes profitable the reclamation of much larger amounts of used rubber and our domestic consumption can be supplied up to 40 per cent from this source" and the action of the Board of Directors of the Rubber Association of America in Akron, comes information of the activity among reclaimers to not only urge greater use of their products but to increase their production so that they can take care of double the tonnage shipped in recent months.

### *20 Per Cent Is Reclaimed*

Statistics issued by the Rubber Association show that 20 per cent of all rubber used in the United States today is reclaimed. Reclaimers, however, maintain that this percentage was at least 35 to 40 per cent during the war and they confidently expect such a condition to be repeated if immediate relief in the form of lower crude prices is not obtained by rubber manufacturers.

Public announcements repeat the numerous advantages of reclaimed rubber in compounds and reclaimers are endeavoring by every means to urge rubber manufacturers to make more use of such stocks.

Opinions of leading reclaimers on Hoover's statement have been obtained by THE RUBBER AGE and are presented herewith:

"Only a few months ago crude rubber could be purchased at 15 to 20 cents a pound. Today the market varies from 50 cents to 70 cents a pound, an increase of approximately 300 per cent.

### *Natural Law Is Functioning*

"There is nothing surprising about this abnormal increase; a natural law is functioning—the old law of supply and demand. Analyzing the situation brings out the following two primary causes: The somewhat tardy effect of the Stevenson Restriction Act and a healthy increase in the manufacture of rubber goods.

"Automobile tire manufacturers and mechanical goods manufacturers in particular will now avail themselves of the long-existing alternative—the use of reclaimed rubber.

"The manufacturers of reclaimed will consequently find a constantly increasing demand for some time and those who furnish the highest quality should find a ready market for their product, for the modern and more progressive manufacturers consider reclaimed rubber as a basic raw material as evidenced by the fact that many of the larger companies now operate their own reclaiming plants.

"It is our earnest desire to be of the greatest service to the rubber goods manufacturing industry by conserving an otherwise great national waste and at the same time by assisting the industry to stabilize to a greater extent the price of crude rubber."

C. E. BISHOP,
Vice-president and factory manager, The Akron Rubber Reclaiming Co., Barberton, Ohio.

### *Situation Taken Too Seriously*

"...with regard to the crude rubber situation and its effect upon the rubber reclaiming industry, I cannot refrain from feeling that the rubber industry as a whole is taking the situation overseriously.

"Because there has been a heavy surplus of stocks, resulting from over-production and lack of consumption in the world, the price of crude has ruled, for

*(Continued on Next Page)*


# Carbon Black Research

**To improve the value of carbon black *in rubber*—**

**To standardize a product of uniformly high re-inforcing power—**

These are the aims of our technical staff, comprising some of the most experienced engineers in the industry.

We will welcome an opportunity to demonstrate the superiority of a product intelligently controlled for use in rubber, as opposed to grades which may be suitable for other purposes, but are deficient in compounding properties.

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| Boston | Cleveland | New York | London, Eng. |
| Chicago | St. Louis | Philadelphia | Paris, France |
| | Hamburg, Germany | Antwerp, Belgium | |

## RECLAIMERS TO DOUBLE OUTPUT IF NECESSARY

*(Continued from Preceding Page)*

the past few years, below production costs. We have, therefore, become accustomed to subnormal values. We are passing through a temporary shortage which will not last. Adjustments will be made on a basis that will be satisfactory to the American manufacturer as well as the planter.

"During this temporary stringency the American reclaimer has a large production available, and our plants are all running to large capacity to tide over the emergency. The crisis will pass and there should be enough rubber for our requirements at a reasonable price, but not on a level which will discourage investment in its production.

"We are fortunate that we have a large production of reclaimed at hand in this emergency, and that the quality of these reclaims is of such a high standard. Despite the distressing conditions through which we have passed since the War, the reclaimers have continued to improve their methods and the quality of their products.

"Statistics from the Rubber Association tend to indicate that the consumption of reclaimed is not yet equal to the available capacity. Quite naturally we feel that more reclaimed could and should be used."

U. S. Rubber Reclaiming Co., Inc.
L. J. PLUMB
Vice-President

*Use of Scrap Should Increase*

"Our company is doing everything possible to increase its capacity. In 1919 for every 100 pounds of crude rubber consumed there were 63 pounds of scrap used. Today only 30 pounds of scrap are being used to every 100 pounds of crude rubber, so that it is evident that rubber manufacturers should turn back to the 1919 basis as soon as possible.

"As a result of research and experimentation reclaimed rubber has been greatly improved so that finished goods containing it are fully as serviceable as if they had been manufactured of the finest crude rubber. Furthermore, the supply of old tires in the United States offers an almost unlimited source for reclaiming."

J. S. LOWMAN,
First vice-president, The Philadelphia Rubber Works Co., Akron, Ohio.

*More Reclaimed Should Be Used*

"We are of the opinion that a consistent use of reclaimed stocks would stabilize the market on crude rubber if generally applied during the next twelve months. The reclaiming industry as a whole has endeavored to maintain its plants and equipment in good shape and has ample capacity to take care of the wants of the trade. It would be to the interests of the rubber industry as a whole to continue to use a reasonable quantity of reclaimed stocks.

J. F. MCLEAN,
President, Pequanoc Rubber Co., Butler, N. J.

## GERMAN MANUFACTURERS NOW USING RECLAIMED

Economic conditions have forced German manufacturers to use reclaimed rubber to some extent in making their tires according to consular advices to the Department of Commerce.

When Germany was entirely cut off from raw material sources by the war, one of its most perplexing problems became the development of suitable substitutes for rubber for war needs. While some artificial processes or substitutes were developed, as for instance, the catalytic synthesis of methyl-Caoutchouc from acetylene (from calcium carbide) by the Hoechster Farbwerke and the Bayer plants during the war, this production was naturally abandoned after the war.

Germany's capacity for consumption of rubber tires may be roughly gauged from examining the local census of automotive vehicles, taken annually for the last four years as of July 1.

The number of touring cars, trucks, and motorcycles on July 1, 1924, was 132,179, 60,629, and 97,965, respectively. On the corresponding date in 1923, the respective figures stood at 100,340, 51,736 and 59,389; and for 1922 the numbers were 82,692, 43,711 and 38,048.

## Move Chicago Office

The Chicago office of J. H. Lane & Co., manufacturers of tire fabrics, has been removed to 223 West Jackson Boulevard.


CARBON BLACKS

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940 Old South Bldg. — BOSTON
611 Metropolitan Bldg. — AKRON

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AND PRINCIPAL FOREIGN CITIES

Est. 1900 Inc. 1919

THE KUHLKE MACHINE CO.

Formerly Jones & Kuhlke

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GENERAL MACHINE WORK

Akron, Ohio

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[For answer see our advertisements in the June 25, July 25, Aug. 25, Sept. 25, Oct. 25, Nov. 25 issues of THE RUBBER AGE]. Reprints furnished on request.

We can help you find the cheapest tar exactly suited to your needs.

Send us your specifications.

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GULL POINT, FLORIDA

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## FIRESTONE INTIMATES CRUDE RUBBER PLANS

H. S. Firestone, president of the Firestone Tire & Rubber Co., commenting on the steady increase in the price of crude rubber, indicated that announcement of definite plans for the undertaking by his company of growing crude rubber on a large scale may be expected in the near future.

"I have been making every effort in the past three years to have the British rubber restriction act rescinded." Mr. Firestone said, "and to encourage planting in countries where restriction was not effective.

"While the Dutch East Indies and other countries have increased their production of the world's supply from approximately 15 per cent in 1922 to 50 per cent in 1925, the rapid popularity of the balloon tire, which takes about a third more rubber than the high pressure tire, had a telling effect.

"This together with the largely increased use of rubber in Europe, has reduced the normal world's working stock in London of approximately 75,000 tons to about 5,000 tons today and has increased the price from 17c a year ago to 70c today.

"If the British Government would abolish its restriction on production, which is approximately 65 per cent of potential production today and allow the plantations under its control to produce all the rubber possible the entire maximum output would no more than equal the world's requirements."

Commenting on the meeting of members of the Rubber Association of America, called by Secretary Hoover, Mr. Firestone said: "I hope it is a vigorous activity to have the restriction act abolished at once.

"I hope very shortly to make an announcement," he added, "offering a great opportunity, which will not only be a profitable investment but will protect our highway transportation and promote our economic welfare."

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## Patents Vulcanizer

Carmon A. Myers, inventor of a vulcanizing apparatus recently granted U. S. Patent No. 1,540,219, has assigned the patent to the Firestone Tire & Rubber Co., Akron. The apparatus, which is for use with molds, embodies annular mating sections comprising an elongate heating chamber having an entrance end. Cooperating conveyor elements operate to transport the molds in a substantially horizontal plane toward the entrance end of the chamber. The conveyors embody means for separating and assembling the respective sections of certain molds as they are being transported. A conveyor is adapted to transverse the chamber and a chute is adapted to feed the assembled molds from the first conveyor to the second conveyor and to turn them into an upstanding position during the feeding operation.

## LUZERNE RUBBER TAKES OUT GROUP INSURANCE

Officials of the Luzerne Rubber Co., Trenton, N. J., have announced the adoption of a group life insurance policy for their 129 employees, under the terms of which each worker will receive protection of $1,000, without cost.

The total amount of insurance involved in this policy, which was placed with the Prudential Insurance Co., is $138,000, some of the executives being covered for $2,000. The insurance, because of the number of employees affected, was issued without medical examinations, regardless of the age of the applicants, and was acquired at minimum cost.

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## Dr. Geer Honored

Dr. William C. Geer, who resigns on June 15 as vice president of the B. F. Goodrich company, was honored by the Akron Section of the American Chemical Association at a banquet on June 2 at the Akron University club. Dr. Geer plans to sail for Europe on June 20 for a year of travel and research work.

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## "Tuffoid" Registered

Rudolph Orlob, doing business as the Mountain States Rubber Co., Salt Lake City, Utah, recently registered in the U. S. Patent Office the trade-mark "Tuffoid" under Ser. No. 211,487. The trade-mark has been used since January, 1924, on belting, hose, asbestos and rubber packings.

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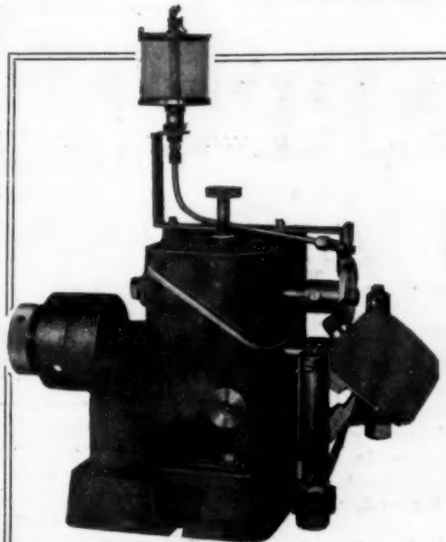

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## DIVIDENDS DEFERRED BY BRITISH GOODRICH

*(Special to* THE RUBBER AGE*)*

When the British Goodrich Rubber Co. invited applications last June for its 7½ per cent Cumulative Preference and Ordinary shares, the prospectus stated that it was intended to pay dividends on the Preference shares on May 31 and November 30 in every year. In a circular just issued to stockholders, however, the directors say they deem it advisable to defer making any further distribution on the Preference shares during the remaining short period of development.

It is explained that the delay in bringing certain portions of the new plant into operation has been more protracted than was originally anticipated, and although the position is more satisfactory now, the concern has not as yet derived the full benefit from the substantial capital outlays made. The concern's first trading period expires on September 30 next, when in the ordinary way complete stock inventories will be taken and the trading results arrived at. Until such time, having regard to the extensive program of construction still being completed, it is not possible to ascertain accurately the company's revenue position.

The shares, to the number of 250,000, were issued in June,1924.

## Estimates Production

The Crude Rubber & Foreign Produce Corp., 250 W. 57th St., New York, recently issued the following statistics:

| | Estimate Made Jan. 1, 1925 | Revised Estimate June 1, 1925 |
|---|---|---|
| *PRODUCTION* (Nov. 1, 1924-Oct. 31, 1925) | | |
| PLANTATION | 421,341 | 442,500 |
| WILD | 35,000 | 35,000 |
| TOTAL ..... | 456,341 Tons | 477,500 Tons |
| *CONSUMPTION* (Jan. 1, 1925-Dec. 31, 1925) | | |
| U. S. A. | 368,500 | 385,000 |
| REST WORLD | 149,600 | 155,000 |
| | 518,100 Tons | 540,000 Tons |
| *STOCKS*—Jan. 1, 1925 | | |
| U. S. A. On and afloat | | 102,000 |
| U. S. A. On hand afloat | | 37,500 |
| Singapore and Penang | | 18,600 |
| TOTAL ..... | | 158,100 Tons |
| *STOCKS*—Jan. 1, 1926 | | |
| U. S. A. On hand and afloat) | | |
| U. K. On hand and afloat ) | | |
| Singapore and Penang ) | | 95,600 Tons |

(95,600 tons would be about 2.12 months' supply for the World)

It will be noted that the figures used embrace production which is available for consumption in 1925. For example, the last shipment month used is October, from the east, which means December arrival.

A cable received from Batavia, Java, indicates that Dutch production, Estate and Native, will show about 20,000 tons increase, over our earlier estimates, in shipments this year.

If the restriction law is rescinded, say, July 1st, we believe the most we could expect in additional shipments available for consumption this year to be 15,000 tons.

In estimating production, we have tried to be as generous as possible with the figures, while, for consumption, we have been as conservative as present facts justify.

Referring to world stocks: In the past, we have used reported stocks in Singapore and Penang, but these figures this year represent only what might be considered rolling stock; in other words, rubber in process of preparation for shipment. For some time past, there has been practically no stock of rubber anywhere in the world except in London, and, of course, just so long as production and consumption approximate each other, there is practically no stock in the Primary markets.

## Patent Hard Rubber Method

Fred Thomas Roberts, inventor of a method and apparatus for making jars of hard rubber, recently granted U. S. Patent No. 1,539,869, has assigned the patent to Paramount Rubber Consolidated, Inc., Philadelphia, Pa. The method consists of seating in the cavities of a pair of molds, raw rubber sheet stock of a composition suitable for vulcanization into hard rubber. Partially cured rubber blocks are applied to the seated stock adjacent to the two ends. The two mold members are brought together under pressure to form a completely closed article and at the same time the surrounding stock is sheared off. The closed article is vulcanized to make a unitary hard member, and thereafter severed transversely to make a number of jars.

## Dunlop to Retire Bonds

American 7 per cent bonds of the Dunlop Rubber Co. will be retired in connection with a new issue of debenture stock to be made next week, it was announced in London. The new stock offering will amount to £5,000,000 and will represent an annual saving of £365,000 to the company.

## Canadian Goodyear Dividends

Directors of the Goodyear Tire & Rubber Co., Ltd., of Canada declared a dividend of 1¾ per cent on the preferred stock yesterday to cover the dividend for the final quarter of 1921, and to be credited to the accumulated dividends due on this issue. Besides this, the regular quarterly dividend of 1¾ per cent was declared. Dividends are payable July 2 to stockholders of record June 19.

## MAY IMPORTS OF RUBBER AGGREGATE 36,889 TONS

Importations of crude rubber into the United States during May totaled 36,889 tons, compared with 23,914 tons in May, 1924, according to statistics recently issued by the Rubber Association. Of the total imports of 34,187 tons of plantations, 10,557 were shipped from Singapore, 7,761 from London, 3,454 from Belawan-Deli, 2,276 from Colombo, 2,082 from Penang, 1,945 from Port Swettenham, 1,959 from Batavia and 1,894 from Sourabaya. Imports of Africans were 287 tons, Centrals and Guayule 567 tons, Manicoba and Matto Grosso, 14 tons. A total of 1,834 tons of Paras were imported from Manaos, Para and Iquitos. Waste was 182 tons, balata 30 tons and miscellaneous gums, 816 tons. Total importations of crude rubber for the five months, ended May 31st were 151,450 tons, against 137,476 tons during the same period last year.

New York received 30,677 tons of plantations, Boston, 1,290, Baltimore, 1,277 and Philadelphia, 172. A total of 771 tons came in at Los Angeles.

The Rubber Association is now using an estimated weight of 199 lbs. per case in compiling its statistics. Investigations indicate that this weight is more accurate under present shipping conditions than the estimated weight of 188 lbs. per case previously used. Future reports will be calculated on the new basis.

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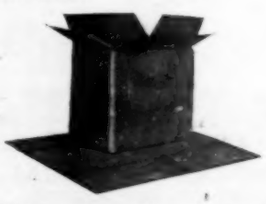
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## BLEKRE TIRE & RUBBER IN HANDS OF RECEIVER

Judge Oscar Halem and E. O. Blekre, founder and former president, were recently appointed receivers for the Blekre Tire & Rubber Co. of Minneapolis, Inc., with a tire factory in St. Paul. Current liabilities are approximately $80,000 while its bonded indebtedness is about $500,000 and outstanding capital stock totals slightly less than $100,000.

The proceedings were instituted in Ramsey County District Court before Judge John W. Boerner, who appointed the receivers. The Blekre company was organized in 1919 as an Iowa corporation and commenced the manufacture of tires in 1920 in a brick plant. The company was reorganized as a Minnesota corporation about three years ago.

The direct cause of the company's inability to meet its obligations was the recent sharp advance in the price of crude rubber, it was said. The latest advances found the company with a low stock of crude rubber and its financial position was made hazardous over night.

## "We Can Grow Rubber"

Akron rubber company officials attending the Shrine convention in Los Angeles the first week in June were thrilled by the prediction of M. Dorenberg of Chiaps, Mexico, that the duration of British control of raw rubber is nearing an end. To back up this statement Mr. Dorenberg told the Akron delegation that he has on his plantation 170,000 hevea trees planted ten years ago and now producing rubber.

"My Mexican plantation proves that America can raise her own rubber," said Mr. Dorenberg, who plans to visit Akron and present statistics to rubber company officials in an effort to add new impetus to the campaign to interest American manufacturers to raise their own rubber.

## Knox Tire Sold

W. F. Henne of Piqua, W. G. Henne of Youngstown, and Cleveland, Coshocton and Indianapolis associates have purchased the Knox Tire & Rubber Co. of Mt. Vernon.

The company has been reorganized with a capital stock of $750,000 and within a short period of time actual manufacture will be launched.

The Mt. Vernon plant is modernly and adequately equipped and at the outset the new organization will be in position to produce 500 balloon tires daily.

The group of men who have purchased the Mt. Vernon company are also the principal stock holders in the Admiral Tire & Rubber Co. of Coshocton.

## Attend Shriners' Convention

Harry L. Corbett, divisional sales manager, and J. B. Mills, manager of the sales promotion department of the India Tire & Rubber Co., Akron, were the India representatives on the Million Dollar Rubber City special train to the Shriner's Convention at Los Angeles.

## HEAVY EUROPEAN BUYING RAISING RUBBER PRICES

*(Special to* THE RUBBER AGE*)*

Current rubber prices represent a very good margin of profit for producers. Some idea of the benefit accruing to the industry may be gained from the statisties of exports to the principal consumers from Great Britain during the first four months of the year. In the following table they are set out against the figures for the corresponding period of 1924:—

| | January-April (tons) | | January-April 1924 | January-April 1925 |
|---|---|---|---|---|
| U. S. A. | 11,142 | 14,022 | £1,461,840 | £2,393,481 |
| Canada | 1,269 | | 177,891 | 206,889 |
| Russia | 399 | | 50,361 | 508,970 |
| France | 6,348 | | 787,558 | 1,124,372 |
| Germany | 2,082 | | 272,497 | 619,357 |
| Italy | 1,741 | | 216,030 | 420,813 |

The revival of demand from Russia and Germany is particularly striking, and there is little doubt that, by increasing competition, the buying from these sources has been an important factor in bringing about the present position. In the whole of 1924 Russia purchased less than 1,000 tons of rubber; in the past four months she has purchased nearly 3,000 tons. Moreover, it is known that Germany is purchasing in excess of her own needs, and it is suggested that the surplus is for Russia.

A further instance of the effect of the enhanced values is afforded by a comparison of French purchases, which, although somewhat less in quantity, realized £1,124,372 ($5,621,860), as against only £787,558 ($3,939,290) in the first third of 1924.


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## FURTHER BRITISH REPLY TO HOOVER STATEMENT

That Secretary Hoover's attack on restriction (in a foreword to the report of the U. S. Department of Commerce on its special investigation of the scheme) is regarded by British producers as of far greater moment than most similar criticisms is proved by the care which the chairman of prominent rubber-growing companies are taking to reply to it at their first opportunity.

Following the example of H. J. Welch of the Rubber Plantations Investment Co., Charles Emerson has made what restrictionists claim to be a satisfactory response. At the recent annual meeting in London of the Malacca Rubber Plantations, Ltd., of which he is chairman, Mr. Emerson said:—

"I am gratified to see the producing industry has acquired yet another prophet in no less a person than Herbert Hoover, who declares a real deficiency of rubber is to be anticipated by 1928 or 1930. This he attributes to the falling off in new planting during the years of depression through which we have recently passed.

"He also comments adversely on restriction, which, with all respect, appears to me to be a little inconsistent, because if the shortage of which Mr. Hoover is apprehensive does occur, the operation of restriction will then have enured to the benefit of manufacturer and consumer alike, as its sponsors have always contended it would, and for this reason. It is past argument that, had there been no restriction and the output of rubber had remained uncontrolled from the fall of 1922 to the present moment, a considerable acreage would have been squeezed out of production and left uncared for, with every principle of estate sanitation neglected, for an indefinite period. True, a portion of such acreage would have been reclaimable, but the process would have been both costly and tedious, and a large part of the abandoned areas, particularly young clearings, would probably have got into such a state that reclamation would have become impossible. Those areas have under restriction been preserved intact and in good condition, and the crops for them will, at the end of the present decade, be available to minimize the shortage Mr. Hoover predicts. This will, I imagine, afford satisfaction to manufacturer and consumer alike.

"There are still those who say restriction should be abandoned because it benefits the Dutch Indies producer more than his British competitor. The argument appears to be that because the Dutchman is better clad than I, I should cast off such reasonably serviceable garments as I possess and go naked to every wind that blows, for the reason that by so doing I should reduce him to a similar condition of chilly nudity. That is not a suggestion that commends itself to me.

"I earnestly hope restriction will be allowed to operate for some time longer. For one thing, I see grave danger of supply overtaking and exceeding demand next year if uncontrolled production is reverted to, and we have already had one desperately unpleasant experience in that direction. For another, it will be much easier to arrange the necessary adjustment of the labor forces of the industry if production is increased by degrees and dispositions made accordingly, than if we are suddenly thrown on to full tapping and everyone has to join in the scramble for labor which would follow. In the latter case something like chaos would ensue; we should have estate bidding against estate for labor, with soaring rates, which it would be exceedingly difficult to get down again, and we should as a consequence be very definitely handicapped vis-a-vis our Dutch competitors for years to come, if not permanently. Moreover, it is doubtful whether we should get appreciably more rubber during the next few months without restriction than by dint of the progressive extra releases provided by the Stevenson scheme. Fresh labor has to be introduced from India and China, and this can only be done gradually.

"Taking things as they are, we must all admit that in view of the steadily increasing amount of rubber which will be available under the provisions of the restrictive legislation during the coming months, the immediate future, though promising, is by no means free from perplexity."

## Test New Coagulant

A new coagulant for rubber is being tested in Jave, Natrium bisulfite, hitherto used, has been supplanted by "pyrosulfite," which is entirely free of moisture and contains up to 67 per cent of $SO_2$, whereas ordinary natrium bisulfite contains only 61 to 62 per cent. The chief advantage of the new product is that it may be kept in good condition for a longer period than ordinary bisulfite. However, it still has to stand the test whether the longer durability applies to the tropics as well.

Acetic acid has a rival in formic acid from Europe and the United States, and has proved very practicable and is about 50 per cent cheaper than acetic acid. However, the Rubber Experimental Station advises planters to await the results of experiments and to see whether the rubber coagulated by means of formic acid keeps as well as when treated with acetic acid, and arrives in good condition in the United States.

## Fisk Has Good May

The Fisk Rubber Co., Chicopee Falls, Mass., has started off the second half of its fiscal year, beginning May 1, auspiciously. Preliminary figures indicate May was the biggest month in both sales and profits since 1919.

May sales were in excess of $6,750,000, while the average for the first six months from November to April, inclusive was less than $2,500,000.

Preliminary profits for May, after all charges including interest and taxes, were in excess of $750,000, or $3.98 a share on the 189,515 shares of first preferred.

## PHILIPPINES REPORT IN HANDS OF PRINTER

The Commerce Department's report on the possibility of growing rubber in the Philippine Islands, as a means of offsetting the British rubber combine, is understood to have been sent to the printer and is expected to be made public shortly. This report is the second in a series of five surveys made under the $500,000 authorization of Congress

The experts engaged in making the surveys are of the opinion that, leaving aside the uncertain political factor involved in the Philippines, the islands offer the best field for investment of American capital in the plantation rubber industry.

The report goes in some detail into the experiences of small rubber planters in the islands, giving figures on the yield and cost of production.

### *Labor is Fairly Cheap*

In greater detail it discusses the labor situation in the Philippines, which is generally satisfactory. Labor can be had at from 40 to 50 cents a day, which though not so cheap as in the Middle East is regarded as relatively more efficient and more satisfactory to handle.

If the rubber plantation industry were developed on a large scale it is believed it would be necessary to make certain shifts in population in order to secure adequate supplies, but it is believed this could be easily accomplished.

There is some difficulty as to land tenure, the present laws of the Philippines being somewhat restrictive, but it is believed this could be adjusted. Soil and climatic conditions are regarded as excellent.

### *Political Future a Question*

The most important question, the report will point out, is that of the political future of the Philippines.

The report, which is understood to have been examined by several well known experts on the Philippines, leads to the conclusion that, with the political future of the Philippines settled in a satisfactory manner, the islands could, under the application of American capital which would naturally follow, furnish the United States with practically its entire supply of crude rubber.

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# ENGLISH RUBBER GROWER PREDICTS LARGE INCREASE IN PRODUCTION

## H. J. Welch, Chairman of Rubber Plantations Investment Trust, Ltd., Says 1925 Rubber Production will be 600,000 Tons—Challenges Hoover's Statement

*(Special to THE RUBBER AGE)*

Two addresses of great general interest were delivered recently in London at the annual meeting of the Rubber Plantations Investment Trust, Ltd.—one by H. J. Welch, chairman of the company, and the other by H. W. Morrison, who has just returned from a visit to Sumatra and the Federated Malay States.

The world's exportable production of rubber (including wild varieties) in 1924 was 405,000 tons, as against 380,000 tons in 1923. Mr. Welch estimates last year's production was about two-thirds of the unrestricted "potential" production of 1925, which, under reasonably normal conditions, he puts at 600,000 tons. This "potential" production will increase annually during the next few years as the present immature areas reach maturity.

### *Production During Restriction*

Mr. Welch thinks it of importance to note that of the actual production of the three years 1922 to 1924, the restricting territories (Malaya and Ceylon) accounted for a declining percentage—viz., from 65 to 51 per cent—the outputs from the rest of the world increasing from 35 per cent to 49 per cent. In the same period exports from the Dutch East Indies are stated to have increased from 95,000 tons in 1922 to 152,000 tons in 1924. The dry weight of Dutch native rubber alone produced in 1924 probably amounted to about 55,000 tons, against about 19,000 tons produced in 1922.

"The world absorption of rubber in 1924," said Mr. Welch, "I place at 470,000 tons, against 430,000 and 390,000 tons in 1923 and 1922. The United States absorbed rubber in slightly decreasing proportions over the last three years—viz., 73 per cent in 1922, 72 per cent in 1923, and 71 per cent in 1924. I estimate the world absorption this year at not less than 500,000 tons, and if the price of rubber averages 1s. 6d. for each quarter for the remainder of this "restriction" year, the world's exportable production for 1925 will probably amount to not less than 470,000 tons.

"In my opinion world rubber stocks were reduced by about 50,000 tons in 1923 and 65,000 tons in 1924. I estimate that on December 31 last world stocks, exclusive of producers' non-exportable stocks stood at 205,000 tons—about five months' consumption. By the end of this year they will probably be 175,000 tons—i.e,. 30,000 tons lower than at December last.

"The weekly average price of first-grade rubber, London equivalent, last year was about 1s. 2d. (28 cents). So far this year it has averaged 1s. 8d. (40 cents) per lb. While undoubtedly legislative restriction is still necessary, few, if any, responsible producers are pleased at the rise in price above 2s. (48 cents). It is good neither for the producing nor the great manufacturing industries that the price should fluctuate wildly. Most producers would be quite content with a price of about 1s. 6d. (36 cents) until restriction is removed. The blame, however, for the shortage of spot supplies lies neither with the producers nor with the restriction. In the November-February quarter the price averaged 1/500th of a penny under the 1s. 6d. required to increase the exportable quota by 10 per cent instead of 5 per cent. The purchase by consumers of a quantity of rubber—very small compared with the average world absorption of over 1,000 tons a day—would have raised the average price this 1/500th of a penny. Sixteen thousand more tons of rubber would then have been made available to the market this year alone. The present trouble, however, will be rectified by the steady operation of restriction, the gap between "potential" production and actual absorption is being lessened, and the time is not far distant when it will disappear.

"If the London price averages 1s. 6d. for the rest of the year, the exportable quota will be raised to 85 per cent on November 1, and next year the world's exportable production is likely to exceed absorption. Manufacturers and others will then be able to replenish their depleted stocks.

"Secretary Hoover, in a foreword to the report of the U. S. Department of Commerce on its special investigation into the complaints of manufacturers that the restriction scheme constituted an intolerable burden on trade, says: 'The producing industries of the world would be much better off in the long run if combinations in restraint of international trade were abandoned on all sides. The stifling of consumption, the stimulation of rival production, the use of substitutes, and the paralyzing of industry generally being their results.' I entirely agree with these principles, and it is interesting to have them enunciated in America, which is one of the highest tariff-protected countries of the world, imposing tariffs deliberately to restrain competition with the home industries.

### *Restriction Not Restraint of Trade*

"Restriction is not a breach of these principles. It is not a combination in restraint of international trade. One only needs to consider the stocks, supplies and prices which have existed since its inception to see that it cannot have operated to restrain trade at all. It has reduced unwanted stocks and prevented supplies in excess of demand.

"Mr. Hoover anticipates a world shortage of rubber in 1928 or 1930. If he is right, such a shortage would have been far greater without restriction, for many rubber areas created during the overplanting period, and which have been reserved under restriction, would have been abandoned without it.

"Producers have spent large sums of money in propaganda to increase world trade, not diminish it, and they will be relieved when demand overtakes the potential supply and renders restriction no longer necessary.

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## PREDICTS BIG INCREASE IN RUBBER PRODUCTION

*(Continued from Page 193)*

"If restriction were immediately abolished, I have no doubt prices would fall again to a very unremunerative level, and the industry might be thrust back into an acute crisis from which it could only escape, after the lapse possibly of years, by the growing increase in demand. The effect of a sudden abolition upon the labor forces of Malaya might be very demoralizing to them if it brought about a scramble for labor. Why should this potent aid to health be abandoned just as the industry is reaching the convalescent stage? Restriction is a medicine, not a food. We do not wish to live on it permanently. There might have been other means of restoring health, but this one was adopted and is proving efficacious. Let it be trusted to complete the cure. And may we not express the hope that when the cure has been effected, the cause of the malady—over-planting—may not again be indulged in? Our lesson has been severe, and luckily conditions made it possible for legislation in British territories alone, combined with the increasing demand, to provide a remedy. The growing supplies for non-British lands suggest that these favorable conditions may not recur in any future crisis. When, because we have attained a reasonable equilibrium between demand and unrestricted supply, the restrictive legislation can be safely abandoned, then and only then will the industry rest on a sound and healthy economic basis.

*Demand Continues to Increase*

"The extraordinary increase in demand seems unabated. World absorption, which in 1914 was only 120,000 tons, was four times as great in 1924. Automobiles are increasing all over the world. The world registration of motor vehicles numbers over 21,000,000, or about ten times the number registered in 1914. There is good ground for believing that every important rubber manufacturing country, with the possible exception of Russia, will use more rubber this year than ever it has done in the past.

"The outlook is now brighter than it has ever been at any time since 1919, and justifies an optimism for the future, cautious, because an unrestricted supply would still exceed demand, but less restrained than has been justifiable in any recent year."

In the course of a description of his recent tour of the Eastern producing countries, H. W. Morrison said that a great amount of work is being carried out on improvement of the strains of rubber. He believes it is distinctly probable that the rubber tree of the future will eclipse the existing tree in yielding capacity. This is obviously a matter of great importance; the more so as the existing plantations are agreed to be deteriorating with advancing age. While in Sumatra Mr. Morrison investigated the effect of unrestricted tapping, as against the restricted tapping of those concerns which were restricting voluntarily. He was assured by those well qualified to give an opinion that those who have been tapping "all out" are going to be heavily handicapped as regards bark reserve, and that restrictionists are going to score heavily through having their trees in fine condition and being able to profit fully by the higher prices at which their production will be sold.

"There are no two opinions in the East about the efficacy of the Stevenson scheme, or the desirability of its being continued," Mr Morrison declared.

## British Tire Prices Rise

The English Dunlop Company's lead in raising the price of its automobile tires and inner tubes will be generally followed in Great Britain. The increases average 10 per cent on tire prices and slightly more than 10 per cent on inner tubes.

This decision has been come to owing to the steady increase in the price of raw rubber, which has been creeping upward for a long period. The last variation in the price of Dunlop tires was over a year ago, and then took the form of a reduction. The price of raw rubber was then 11d. (22c) per lb., as against 2s. 5d. (58c) when the present increase took effect. The price of tires in Continental Europe has been increased twice within the period since the last reduction. The prices before the advance were the same as, and lower in some sizes, in 1914. Despite the low price, the tires have three or four times the life of 1914 tires.

The British tire manufacturers have repeatedly asked the Government to include imported tires under the McKenna duties, claiming that no advance of price would take place if such a course were taken, as like the British automobile manufacturers (who have reduced their prices now the McKenna duties are to be renewed) they would be able to increase output and therefore lower costs if competition were restricted by putting cheap Continental labor in the same position as British labor by the impost.

## Patents Collapsible Core

John C. Tuttle and Frederick A. Bollinger, inventors of a collapsible core recently granted U. S. Patent No. 1,539,923, have assigned the patent to the Firestone Tire & Rubber Co., Akron. The core consists of separable sections having inwardly extending tongues. Locking rings are adapted to lie on each side of the tongues. Clamping means irremovably secured to one of the rings and passing through the tongues are provided with a tapered surface and a wedge is adapted to cooperate with this surface.

## "Lewis Rubber" Registered

The Lewis Rubber Snubber Co., Portland, Ore., recently registered in the U. S. Patent Office the trade-mark "Lewis Rubber" under No. 199,277. This trade-mark, which has been used since Aug. 23, 1923, on rubber snubbers for automobiles, is not subject to opposition.

## COMMITTEE CONSIDERS 75 CHEMICAL COURT ENTRIES

Between seventy-five and eighty applications for the Court of Chemical Achievement to be held in conjunction with the Tenth Exposition of Chemical Industries at the Grand Central Palace, New York, during the week Sept. 28th to Oct. 3rd, have been received and most of them have been submitted to the Approval Committee of the American Chemical Society. Preliminary consideration of some of the applications, which are for new chemical products, instruments, equipment, and new processes developed in the United States during the past few years, indicate that a few will probably not be accepted. The majority, however, are expected to secure admission, although the final decision one way or the other rests with the American Chemical Society Committee.

In connection with the present industrial boom in the South the Southern Section of the Chemical Exposition bids fair to be one of the largest groups this year. A number of leading chemical and allied companies, railroads, and power corporations will have exhibits. Among some of the leading firms in this group will be the Tennessee Copper & Chemical Corporation; the Federal Phosphorus Corporation; the Southern Talc Corporation; the Southern Minerals Corporation; the Southern Railway System; Seaboard Air Line; North Carolina Department of Conservation; Manufacturers Record; and a number of prominent power companies.

Up to the present time, something over twenty-five American universities have filed entries of chemistry students for the course for students in commercial practice of chemical engineering to be held for the second time at the Chemical Exposition this year, under the direction of Prof. W. T. Read of Yale University. A number of colleges have indicated that they will give credit to students attending the one week's course at the Exposition, in their regular work in chemical engineering. The general lectures and examinations will be on the practical phases of actual chemical plant work with leading authorities in the technical world giving the lectures.

Reports from the Chemical Exposition management state that the entire first and second floors of the Grand Central Palace have been contracted for by exhibitors, while a goodly portion of the third floor is already taken. Of course, the Court of Chemical Achievement, which will be on the third floor, will take a large part of this space and will attract many visitors to this floor. Total exhibitors to date indicate that this year's Chemical Exposition will be one of the largest industrial expositions ever held in the United States.

## Liquid Rubber Formed

The Liquid Rubber Co., Winchester, Mass., was recently incorporated by John Abbott and John P. Carr with an authorized capital of $100,000.

## S.A.E. RIM DIVISION TO WORK ON STANDARDS

Nine important automobile manufacturing companies are represented in the membership of the newly constituted tire and rim division of the Society of Automotive Engineers, which is just getting ready for business. Acceptances from representatives of several other leading concerns, to whom appointments have been tendered are also pending, and the feeling is that the group, under the chairmanship of Henry M. Crane, past president of the Society, will be strong enough to have considerable weight in the movement in favor of balloon tire standardization.

As previously indicated the work of this division will be along the lines of a general steering committee. The problem involved is quite different from that confronting the Society in most of its standards work and on that account must be faced in a different way, hence the inclusion in the divison of automobile engineers engaged in automobile manufacture exclusively.

*Favor Standardization*

The proposition, viewed broadly, is that while all parties affected, including both the tire industry and the automobile manufacturing industry, favor standardization as a principle, it is sometimes difficult to cope with as a commercial condition, especially in a field as new as balloon tire design. According to the view prevailing in the tire business, automobile makers, and especially a number of the volume producers are prone to insist upon selecting tires that conform to their own designs, rather than adapting their designs to tire sizes falling within the proposed list of standards. Since large orders are involved in such purchases, they say, the tire maker has no alternative but to accept the business or permit it to be grabbed off by competitors.

Since this profession virtually places the burden on the automobile makers it remains for them to find means to conform to the standards already proposed by the tire people, or else offer a reconstructed list of sizes. The report of the committee appointed sometime ago by the National Automobile Chamber of Commerce, at the quarterly meeting of the manufacturers' association this week, was expected to throw some light on the progress of sentiment in that quarter.

In the meantime the Division of Simplified Practice of the United States Department of Commerce, having thoroughly circularized the rubber industry with respect to balloon tire standardization, has addressed the automobile makers on the same subject, proffering its services as an organizer of standards, and presenting a summary of results of its correspondence with ten different groups representing the tire and allied interests. These groups welcome the offices of the Government bureau tendered in that connection.

## *HIGH PRICES STEADY RETAIL TRADE*

**The recent advance in crude rubber which has resulted in the marking up of prices on several of the cheaper lines of overshoes, galoshes and other protective footwear, has done a good deal toward restoring confidence in this merchandise on the part of retailers. Despite the way retail stocks were cleaned out by the heavy storms of the late Winter, there was a certain amount of price-cutting in some wholesale quarters that brought about quite a little canceling. Not only have many of the canceled orders been reinstated since the advances in prices have taken place, but many retailers who had been holding off are now placing orders in the hope of anticipating any further rises that may occur.**

## EXPECT ADJUSTMENT OF N. Y. RUBBER AFFAIRS

An adjustment of the affairs of the New York Rubber Co., of Beacon, N. Y., which passed into the hands of receivers in equity in August, 1923, is expected to be consummated in the near future, following the action of Federal Judge Bondy in signing a decree of sale and the appointment of a special master to conduct the sale of the property.

Under the provisions of the decree bids may be submitted to George W. Retz, of A. D. Juilliard & Co., Inc., and James G .Meyers, the equity receivers, or to George H. Gage, the special master named by Judge Bondy, for the business as a going concern or for separate parcels at any time prior to the date of the public auction to be fixed by the master.

Judge Bondy reserves the right to accept any bid or bids which may be received prior to the date of the sales and it is assumed that if an offer satisfactory to the creditors and the administrators of the estate is received prior to the date of the advertised sale then the public auction sale will be called off.

In the event that no acceptable bids are received prior to the date fixed for the sale at public auction then the master will offer the property in bulk and in separate parcels at the auction which will take place at Beacon.

The decree makes provision for the purchase of the business as a going concern as a step in carrying out a reorganization in the event that a plan is formulated by that time. Negotiations have been under way for some time to perfect a plan acceptable to all parties interested in the case but nothing tangible has developed along this line yet, although it was intimated yesterday that a constructive plan may yet be completed.

That negotiations are pending for advancing to the creditors of the New York Rubber Co., a plan of reorganization, backed by an undisclosed group, was stated by Frederick W. Murphy, of Murphy & Fultz, attorneys for the creditors' committee. Mr. Murphy pointed out, however, that the committee is in no way interested with the proposed plan of adjustment, but that first word of such a move was made last week by Louis W. Stotesbury, counsel to the equity receivers of the business, George W. Retz, of A. D. Juilliard & Co., and James G. Meyers, an attorney of Beacon.

Counsel stated that he was unaware of the terms of the reorganization or to what stage it has advanced, referring all inquiries to Mr. Stotesbury. Efforts to reach the latter were unavailing.

Current liabilities amount to $376,639, while the assets are $685,000, according to a report recently compiled by the Frank, Loeb, Schneider Co.

The CARTER BELL MFG CO
CARTER BELL STANDARD SINCE 1898 RUBBER SUBSTITUTES
150 Nassau Street New York

EMBOSSING CALENDERS
For Artificial Leather, Oil Cloth, Carriage and Automobile Covers
DRYING MACHINES
with Copper or tinned iron Cylinders for Cotton Ducks, Drills and Sheetings
The Textile-Finishing Machinery Co.
OFFICE, No. 83 EXCHANGE PLACE
PROVIDENCE, R. I.

## NAME JACOBY TRUSTEE FOR STUDEBAKER-WULFF

Attorney J. Wilbur Jacoby, Marion, was appointed trustee in bankruptcy of the Studebaker-Wulff Rubber Co. by Judge H. D. Grindle, referee in bankruptcy, at the first meeting of creditors.

Referee Grindle after allowing the filing in accordance with the law, found 39 creditors representing a total claim of $42,621.33 for Frank P. Burch, Akron, for trustee, and 51 claims representing $50,202.71 whose votes were cast for Attorney Jacoby for trustee.

All of the local attorneys who filed claims voted for the local man and he also received the vote of a large per cent of the foreign creditors.

Following the tabulation Referee Grindle appointed Attorney Jacoby as trustee and fixed his bond at $25,000. Owing to the lateness of the hour the examination of the bankrupt was continued until next Friday.

Attorney Walter G. Kirkbride, Toledo, who was appointed receiver in bankruptcy when the Studebaker-Wulff Co. was adjudicated bankrupt in the federal court, May 21, made a report previous to the hearing.

He stated that the plant here and at Wadsworth had been operated part time to get out some orders and that there was now in the hands of the receiver approximately $13,000 in cash and $4,000 to $5,000 in outstanding drafts.

Liabilities of the company at the time it went into bankruptcy were listed at $567,782.76 and assets at $1,155,229.38. A re-appraisement is to be made and appraisers are to be appointed next Friday.

Attorney Pruitt, Chicago, representing the bankrupt, stated the examination will reveal that there was no misappropriation of the company's funds, but that the company was forced into bankruptcy by the high advances frequently made in the price of crude rubber.

## Business Good in South

On the whole business conditions are more stable in the south than in the north, according to R. H. Prinz, Cincinnati, Ohio, general manager of the I. J. Cooper Rubber Co. stores.

Sales in the rubber line have been on the increase in the Knoxville territory, he said, and indications are that they will continue on the upward trend. The Knoxville branch of the I. J. Cooper Rubber Co. will be located at 517-519 State St. it was announced.

A Native of Sumatra Gathering Latex

## NEW INCREASE PROBABLE IN BRITISH TIRE PRICES

Another heavy increase in the price of tires in Great Britain is foreshadowed by F. Lionel Rapson, of the Rapson Tire Co., whose tires are used exclusively by the Prince of Wales.

In a letter to the press, Mr. Rapson writes: "At the moment there is an unprecedented demand for tires all over the world. This is due to the tremendous increase in the output of new cars. The majority of the American factories are engaged on record-breaking programs, and there is every likelihood of all previous figures being eclipsed.

"As there is little likelihood of the situation improving for some weeks, the probability is that prices will continue to mount, until manufacturers will be compelled again to increase tire prices. The increase will be one of 20 per cent."

## Western Reserve Damaged

Fire caused by naphtha exploding at the Western Reserve Rubber Co. in Kenmore, Ohio, caused considerable damage to the plant at 154 Kenmore-blvd.

Akron fire companies responded to the alarm. They reported that most of the machinery on one floor was destroyed by the fire and explosion. No one was injured as the fire occurred after working hours.

The company manufactures rubber balloons and novelties. Production was not entirely checked by the accident.

## Rubber Method Patented

William DeRusha, inventor of a method of forming holes in rubber articles, recently granted U. S. Patent No. 1,541,119, has assigned the patent to the Fisk Rubber Co., Chicopee Falls, Mass. The method comprises cutting a hole at least part way through the reinforcing pad, inserting in the hole a plug which protrudes, pressing the rubber of the article against said plug in such manner that said rubber tends to move from over said plug. The article is then vulcanized.

## *Charles E. Campbell*

Charles E. Campbell, former rubber expert of the B. F. Goodrich Co., Akron, died recently at his home in Great Neck, L. I., after a protracted illness. He was well known in rubber circles in the Middle West. After leaving Goodrich some years ago he went to the Dauntless Rubber Co., Ashland, Ohio. Funeral services were held at his home and interment was in Akron.

## *Thomas Lawson Barnes*

Thomas Lawson Barnes, manager of the manufacturers' sales department of the B. F. Goodrich Co., in Detroit died recently at White Lake, Mich. He had been resident man in Detroit under Harry Miller for the past five years and had been identified with the tire industry for a long time. His home was in Syracuse, N. Y.

## DUTCH RUBBER GROWERS WILL NOT BLEED TREES

While the production of rubber on Dutch plantations doubled in the last three years, having supplied last year about 185,000 tons out of a total world production of approximately 450,000 tons, the Dutch growers are not going to unduly increase their output so as to in any way injure their plantations.

"We are not going to bleed our plantations," said one prominent Dutch rubber grower.

"It takes about seven years to grow rubber trees, and the present output is easily being disposed of," he continued. With the Dutch rubber output for the next year placed at 200,000 tons, a gain of about 15,000 tons from the previous year, it will still have very little effect on the market, it was stated. The shipments of Dutch rubber during the first three months of this year amounted to about 32,100 tons.

### *One Contract Already*

The General Tire & Rubber Co. has already contracted for the purchase of about 10,000 tons of rubber from one of the largest Dutch estates, to be delivered within the next four years, 2,500 tons annually, and at a minimum price of 1s. 2d. and no maximum, the price to be calculated on the average price of standard sheet rubber in London, it was stated here.

Other large rubber using industries are known to have placed large orders both with Dutch and British growers at prices above current high quotations.

W. O. Rutherford, president of the Rubber Association of America and vice president of the B. F. Goodrich Rubber Co., stated that the "cloud in the rubber industry's horizon will be dispelled before long The rubber industry demonstrated during the period of depression great resoureefulness. It emerged with broader vision and more scientific methods of distribution and production. It can be depended upon to clarify the present crude rubber problem with equal dexterity. This in any event is purely an inter-industrial matter, and an exchange of opinions and facts will rectify the balance.

"The present price of crude rubber is causing concern. The real crisis in the rubber situation will be two or three years hence. The rubber industry for the last five or six years had a rather difficult time. As a result, rubber planters became greatly discouraged and largely discontinued planting. This has resulted in a temporary shortage of rubber. With the improvement in the rubber situation, rubber planters have revived their interest and will now take up planting again. It takes about six years to put a rubber tree in the state of production.

"The Goodrich Company today is operating at capacity in the tire division and practically at capacity in the mechanical and commercial divisions. We are producing about 25,000 tires daily, a large majority being balloons. Our tube production is running about 32,000 daily.

"Sales are very much ahead of last year.

## APRIL EXPORTS OF HOSE AND BELTING WERE HEAVY

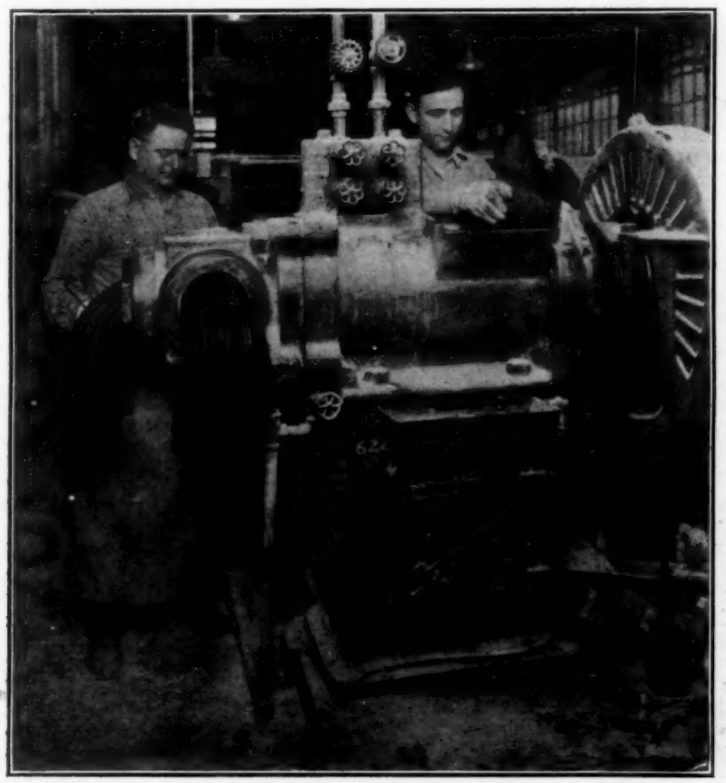
April exports of rubber belting were larger than for any month in the last three years except May, 1923, when 385,175 pounds were exported. During April 378,729 pounds of belting, 539,875 pounds of rubber hose, and 137,210 pounds of packing were exported; the hose shipments were the heaviest for any month since January, 1922.

Some of the leading markets for hose were the United Kingdom, 114,900 pounds; Mexico, 68,200; Cuba, 52,000; Japan, Canada and South Africa, each from 30,000 to 35,000 pounds; Chile and Australia, from 25,000 to 30,000; and six other markets, from 10,000 to 15,000 pounds each.

Exports of belting were also widely distributed, the United Kingdom, Mexico, Chile, Australia, Canada and Brazil each taking over 20,000 pounds and seven other markets from 10,000 to 18,000 pounds each.

Shipments to Chile continue much lighter than last year, and the South African market remains a smaller market than in 1922 and 1923. Mexico, Canada, United Kingdom, Cuba, Argentina, Peru, British India, Japan and Australia, however, have increased their purchases from America.

The United States is by far the largest exporter of both rubber belting and hose and is one of the leading competitors in the packing trade, and in these lines recognized quality is the only sound basis on which business can be built, which indicates the merit of the American products.



**The Rubber Strainer in Use**

## B. F. Ruether Promoted

B. F. Ruether has been appointed by the United States Rubber Co., as manager of sales of the Mechanical Rubber Co., Cleveland, to succeed Arthur C. Kingston, who resigned last month to become sales manager of the Boston Woven Hose & Rubber Co. Mr. Ruether has been assistant sales manager of the Mechanical Rubber Co. since 1921, and previous to that time he was for 16 years associated with the Peerless Rubber Co. Mr. Kingston succeeds Edgar E. Fay as director of sales of the Boston Woven Hose & Rubber Co. Mr. Fay resigned after having been in charge of sales for that company for 25 years.

## Use Rubber Strainer

At the Bridgeport plant of the General Electric Co. a large strainer is used in one of the processes of the manufacture of rubber insulation.

Pure crude rubber is mixed with other ingredients in a large masticator. It is then run through a sheeting mill and, from the mill, goes into the strainer. This machine has three very fine wire mesh screens and, as the plastic rubber compound is forced through, all grit and dirt, bits of wood, metal or other foreign bodies are left behind. The rubber compound is then put through a warming mill, after which it is ready for application to the wire on the tubing machines.

## AMERICAN CYANAMID NOW MANUFACTURING D.P.G.

It is probable that the recent drop in the price of diphenylguanidine and other rubber accelerators may be attributed to the entry of the American Cyanamid Co. into the accelerator field with their Aero Brand Diphenylguanidine.

It is said that this company has developed a new process which results in the production of an article of a very high degree of purity and for which the principal raw materials are obtained from other products manufactured by the company, so that it is in a position to take care of the needs of the rubber trade with a thoroughly dependable article.

Although this is the first product offered especially to the rubber trade, the Cyanamid company has a long record of research and production achievement in the chemical industry. It was the first company on this side of the Atlantic to undertake successfully the commercial production of nitrogen products from the air. It now operates four plants producing heavy chemicals for the fertilizer trade, cyanide for metallurgic purposes and for electroplating, aqua ammonia, prussiates for the color trade and other miscellaneous products.

## RECLAIMERS ANNOUNCE PLANS FOR MORE OUTPUT

AKRON, June 22, 1925—Reclamation of used rubber is regarded as the most effective weapon immediately at hand for American rubber manufacturers to use in combatting the high prices of crude rubber. On June 19 J. K. Mitchell, president of the Philadelphia Rubber Works company of Akron announced that work had been started to increase the equipment at the Akron plant so that the total capacity will be raised to 2,000,000 pounds a month.

President Mitchell also announced that two new factories will be built, one of which will be located in the east.

The Akron Rubber Reclaiming company announced today that its Barberton plant would be turning out seven tons of finished material daily. William Welch, vice president and general sales manager, declared that the capacity of his plant would be ten tons of finished material a day. C. E. Bishop, factory manager, stated that the plant was now operating on a three shift basis. *(See statements from reclaimers on Pages 187 and 188, this issue. EDITOR)*

## Poplar Bluffs to Resume

Resumption of operations by the Poplar Bluffs Rubber Co., Poplar Bluffs, Mo., manufacturers of cushion inner tires for automobiles, in the next thirty days, was announced recently by officers. J. H. Dalbey of Elgin, Ill., has been elected general manager of the concern, and the plant is being improved so that the manufacture of tires may be started by July 15 at the latest.

The concern will add other molds so that the manufacture of golf balls, tennis balls, shoe heels and other rubber articles will be possible.

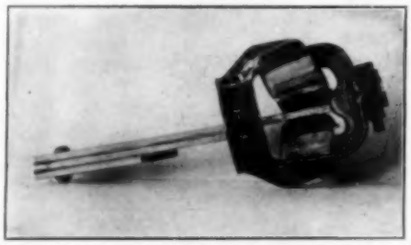
## *DUTCH RUBBER SHARES SHOW MATERIAL RISE*

*A cable from Amsterdam, dated June 21 to the N. Y. Times has the following to state:*

**"On the Dutch Stock Market rubber shares were notably firm last week, following the higher prices for the commodity, which now sells at 3s. in the British markets, as against 20d. at the beginning of the year. The present price of rubber is believed to be too high and to have been obtained through speculative influences. For that reason some reaction is expected in the price of the commodity itself, but not in the quotation for rubber stocks, since those have not equivalently followed the rise in rubber.**

## RUBBER HELPS WINNING CAR AT INDIANAPOLIS

The two Duesenberg cars which came in first and third at the Indianapolis Races, Decoration Day, were both equipped with Rubber Shock Insulators. The success of these cars and of the Duesenberg model, which came in first last year and which was also Rubber Shock Insulated, can be attributed partly to this unique spring suspension.



**The Rubber Shock Insulator**

This spring mounting greatly absorbs shocks and vibration, reducing the wear and tear on the chassis and units, as well as increasing the comfort of the driver. A certain amount of flexibility is afforded which materially affects the action of the car. The absorption of stresses and strains in the Rubber Shock Insulators relieves the different car units of added burdens and allows the springs to function as they should.

Shock Insulated cars have won this event consecutivey for two years, and it would seem that the Rubber Insulators are in a large sense a contributing factor in the demonstrations. It would also appear that such consistent winning is not a coincidence—Rubber Shock Insulator equipment in the passenger and commercial car fields has won merit and certainly helps. This type of equipment has been giving consistent service over long periods of time on Yellow Cabs and Mack Trucks and Buses.

The Rubber Shock Insulator is a spring shackle which as its name implies is made of rubber. It is manufactured by the Rubber Shock Insulator Co., 252 W. 64th St., N. Y. The rubber shackle replaces the customary steel shackles, bolts, bushings and grease or oil cups.

## THOMAS PLANT BOUGHT BY KELLY-SPRINGFIELD

The Thomas Rubber Co., Wooster, Ohio, which was closed on account of lack of funds to pay off debts and workmen's wages, was sold under the hammer recently at the Wayne county court house for $68,000, which is above two-thirds of the appraisement.

The property had been appraised at ninety-four thousand dollars, and had to be sold for not less than $63,333.

The plant was bought by the Kelly-Springfield Rubber Co., which owned the plant two years ago and sold it for nearly ninety thousand dollars to the Thomas Co. Everything went all right until the company was refused capital for the business venture of a new machine that was installed some time ago on the ground that they did not have a clear title to the land.

The Internal Revenue Department has a claim of $15,000. Whether it will be able to collect its taxes was not known.

## Wire Business Good

Active construction work by central-station companies throughout the country has been responsible for the majority of orders placed this week with electrical manufacturers. Several reports indicate that a number of negotiations are under way in connection with power-company extension and improvement work. Industrial firms are also placing fair orders for material. Buying still remains conservative and for immediate requirements, in the belief that price reductions on other apparatus, following those made recently on motors, may be announced, but there is no foundation for this attitude. A phase of the present condition is that all orders call for very prompt deliveries.

The large increase in the price of rubber has created a certain uneasiness among wire manufacturers. No increases have yet been announced as no company is desirous of taking the initiative. A large wire company says that sales are good, but some extremely low prices are being quoted in certain instance by competitors.

In New England there is an encouraging activity in the sale of electrical equipment, and street lighting is active in Rhode Island and New Hampshire. Central-station equipment is in good demand in that district, and appliance sales are active. Some good orders were placed in the New York district by central-station companies and the demand for construction materials is active. In general central-station orders placed in that district are steadily increasing. In the Southeast the general expansion programs of utility companies are productive of good orders for all classes of construction materials. There is a brisk demand for cable in the South for use in the installation of "Whiteway" equipment. Business in the Middle West is on an even basis with the tone optimistic. Buying of equipment by the various utility companies continues and construction work is rapidly proceeding.

# F. R. HENDERSON INCORPORATES THE RUBBER EXCHANGE OF NEW YORK, INC.

## By-Laws and Settlement Terms for Forward Contracts Drawn Up for Approval of Crude Rubber Trade—Exchange Will Help to Eliminate Wild Fluctuations

F. R. Henderson, president of the Crude Rubber & Foreign Produce Corp., New York City has obtained a charter from the Secretary of State to organize the Rubber Exchange of New York, Inc. The purpose of this exchange, Mr. Henderson stated is to establish a trading center for crude rubber in New York and to arrange for the settlement of forward contracts in the product. It is hoped that the establishment of the exchange will eliminate the wild fluctuations which have been common in the recent scramble for rubber and which have resulted in different quotations being made in different sections of the city. All business now is being done over the telephone or by mail.

### *To Seek Members*

Mr. Henderson stated that crude rubber dealers in all parts of the city would be requested to join the exchange. He obtained the charter, he said, for the purpose of setting the machinery in motion, and he expects that the larger manufacturers and consumers of rubber located all over the country will give the new institution their moral support. The sponsors of the new exchange intend to canvas crude rubber dealers and brokers immediately for members. A set of by-laws and contracts for settlement terms for future orders has already been drawn up and these will be submitted to all the dealers so they may have a clear understanding of the purpose of the exchange.

Some time is expected to elapse before the new exchange can start operations, because of the many details still to be agreed upon and the lining up of members. The exchange's quarters, according to Mr. Henderson, will be in downtown New York although no location has yet been decided upon.

Opinion in the rubber trade is divided on the merits of the Rubber Exchange and it will be some time before opinion on the matter is crystalized.

## Patents Vulcanizing Method

Raymond Mark Warner, inventor of a method of vulcanizing rubber recently granted U. S. Patent No. 1,540,580, has assigned the patent to the Miller Rubber Co., Akron. The method consists in producing an article having one part vulcanized and another part unvulcanized by mixing two separate stocks, one containing rubber sulphur and a vulcanization retarder, and the other rubber but not sulphur. The stocks are juxtaposed and subjected to vulcanizing temperature.

## Miller Announces New Tire

The Miller Rubber Co., Akron, recently announced a new balloon tire which has the same shape when inactive and not under load as it has when loaded and running. The tire is so shaped that if inflated with proper ratio of air pressure to load carried, it will not squash out of shape when running. This eliminates the flexing that the ordinary balloon is subjected to when running. Internal friction is cut down, and the tire life is extended.

## Dayton is Prosperous

The 1925 business record of the Dayton Rubber Manufacturing Co., Dayton, Ohio, will surpass that of 1924 by 30 to 35 per cent, according to the officials.

The North Main Street sales station broke two records on May 30 and May 31. More tires were sold on May 30 than on any previous day, while May 31 was the biggest Sunday ever recorded.


***By Order of the Liquidators.***

**THE BELDAM TYRE CO. (1920) LTD.**

WINDMILL ROAD BRENTFORD, MIDDLESEX

Valuable Freehold and Highly Important MANUFACTURING PREMISES equipped with HIGH CLASS MODERN RUBBER MACHINERY for the production of Pneumatic Tyres, Tubes and other Rubber Goods.

THE WORKS WITH LAND COVER AN AREA OF ABOUT 3½ ACRES, are within a few minutes' walk of Northfields Station (District Railway) the new Great West Road, Brentford Stations (Great Western and Southern Railways) and near the River Thames.

THE BUILDINGS ARE MODERN, of one story, well lighted, capable of handling an extensive business and *contain* A FLOOR AREA OF ABOUT 90,000 SQUARE FEET.

Electric Power, Lighting, Gas and Water are laid on.

THE HIGH CLASS PLANT AND MACHINERY *has been installed by the best makers*, is up-to-date, in excellent state of preservation and ready to start up immediate operations.

The offer of this valuable, well-known property to manufacturers of Tyre and Rubber Goods presents a unique opportunity for acquiring one of the finest equipped works in the Rubber World.

**LEOPOLD FARMER & SONS**

will offer the above to auction at The London Auction Mart, 155, Queen Victoria Street, London, E.C.4. on WEDNESDAY 15th July 1925, at 2.30 p. m. (unless previously disposed of). Particulars and plans of:—the Auctioneers, 46, Gresham Street, LONDON, E.C.2. England.

***By Order of the Liquidators.***

**STANDARD TYRE & RUBBER MANUFACTURERS LTD.**

BELGRAVE RUBBER MILLS ALPERTON, near WEMBLEY, MIDDLESEX

Extensive FREEHOLD MANUFACTURING PREMISES equipped with HIGH CLASS MODERN RUBBER MACHINERY for the production of Pneumatic Tyres, Tubes, Solid Tyres and Rubber Goods.

THE WORKS AND LAND COVER 14 ACRES, have a frontage to the Grand Junction Canal and almost adjoin Alperton Station (District Railway)

THE BUILDINGS ARE MODERN, of one story, well lighted, capable of handling an extensive business and *contain* A FLOOR AREA OF ABOUT 70,000 SQUARE FEET.

Electric Power, Lighting, Gas and Water are laid on.

THE HIGH CLASS PLANT AND MACHINERY *has been installed by the best makers*, is up-to-date, in excellent state of preservation and ready to start up immediate operations.

The offer of this valuable, well-known property to manufacturers of Tyre and Rubber Goods presents a unique opportunity for acquiring exceptionally well equipped works.

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# FACTORY EQUIPMENT

## "INDUSTRIAL TYPE" SPUR GEAR SPEED TRANSFORMER

The Hill Clutch Machine & Foundry Co., Cleveland, Ohio, has developed the "Industrial Type" Spur Gear Speed Transformer realizing the urgent need for an efficient and durable speed changing device for such service as is encountered in connection with conveyor drives, and for all general industrial work where speed transformer units are operated under continuous or heavy service conditions; in other words, something substantial to meet the every day rough usage of mill operation.

"Industrial Type" Spur Gear Speed Transformer

The "Industrial Type" Speed Transformer consists of a nest of plain spur gears revolving in oil, changing the revolutions per minute of the input shaft to some desired revolutions per minute of the output shaft. The power transmitted is the same in both shafts. The efficiency is higher than any other form of gearing. The gears all have 20° involute form cut teeth. The short length of these teeth combined with their powerful cross section insures great strength and reliability.

***Has Both High and Low Speeds***

Of great importance is the central housing located in the main frame. With this construction it is possible to offer the trade a gear transformer having both high and low speed shafts supported in double bronze bearings, insuring strength, rigidity and quiet operation. We have also provided for ordinary thrust conditions.

Great accessibility is obtained as the cap and both ends can be quicky removed. The oiling arrangement is unique, being a continuous and thorough splash system lubrication obtained by a metal disc on the high speed shaft which automatically lubricates every gear and bearing in the case. The entire unit is enclosed, is dust proof and leak proof.

Both high and low speed shafts are identical axial alignment. The action is positive and both shafts revolve in the same direction.

The "Industrial Type" Speed Transformer is made in seven sizes. Each size has a number which bears a fixed relation to the diameter of the low speed shaft. The number also indicates the horsepower the low speed is capable of safely transmitting at 100 R.P.M.

It is the "short cut" from electric motor to machine or from shaft to shaft where speeds are widely different. It eliminates cumbersome speed changing devices, saves power losses and being a closely coupled unit requires very little space for installation.

Catalogs and bulletins will be mailed upon request.

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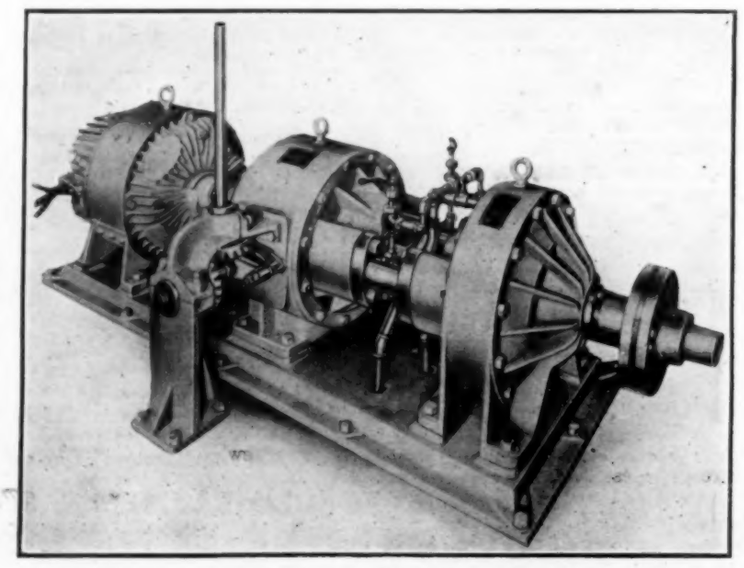
## AMERICAN ENGINEERING SPEED REDUCTION UNIT

In a new speed reduction device built by the American Engineering Co., Philadelphia, a Hele-Shaw hydraulic pump and Hele-Shaw hydraulic motor are used as a speed reduction unit in place of the usual nest of gears. By utilizing hydraulic pressure, great power and silent, smooth operation are combined with extreme flexibility of control. Elimination of gears with their attendant friction losses, gives high economical efficiency. Any desired ratio of speed reduction, up to 850 to 1, can be had without stopping the direct-connected electric motor. This new device already has been adapted to a wide variety of machine drives, including presses, broaching machines, planers, testing machines, cranes, mechanical stokers and many uses on shipboard for deck machinery.

The speed reduction unit is shown in the photograph below.



American Engineering Co.'s New Speed Reduction Unit

## RIMS INSPECTED AND APPROVED DURING MAY

The following statistics were recently issued by the Tire & Rim Association:

| SIZE | NUMBER | PCT. |
|---|---|---|
| Clincher Rims: | | |
| 24 x 3 | 1,706 | 0.1 |
| 26 x 3 | 7,667 | 0.3 |
| 28 x 3 | 132 | 0.0 |
| 30 x 3 | 66,754 | 2.2 |
| 30 x 3½ | 423,155 | 16.7 |
| 31 x 4 | 69,482 | 2.7 |
| Straightside Rims (Pass.) | | |
| 27 x 3½ | 194 | 0.0 |
| 28 x 3½ | 943,459 | 37.2 |
| 29 x 3½ | 1,277 | 0.0 |
| 30 x 3½ | 54,784 | 2.1 |
| 32 x 3½ | 562 | 0.0 |
| 28 x 4 | 270,715 | 10.7 |
| 29 x 4 | 160,934 | 6.8 |
| 30 x 4 | 39,710 | 1.6 |
| 32 x 4 | 32,702 | 1.3 |
| 33 x 4 | 2,307 | 0.1 |
| 29 x 4½ | 43,100 | 1.7 |
| 30 x 4½ | 113,074 | 4.5 |
| 31 x 4½ | 41,318 | 1.6 |
| 32 x 4½ | 64,873 | 2.6 |
| 34 x 4½ | 10,671 | 0.4 |
| 30 x 5 | 43,321 | 1.7 |
| 31 x 5 | 32,388 | 1.3 |
| 33 x 6 | 2,886 | 0.1 |
| Truck Rims: | | |
| 30 x 5 | 76,258 | 3.0 |
| 34 x 5 | 10,553 | 0.4 |
| 32 x 6 | 10,859 | 0.4 |
| 36 x 6 | 8,406 | 0.3 |
| 34 x 7 | 1,838 | 0.1 |
| 38 x 7 | 1,920 | 0.1 |
| 36 x 8 | 310 | 0.0 |
| 40 x 8 | 915 | 0.0 |
| 40 x 10 | 158 | 0.0 |
| TOTAL | 2,538,388 | 100.0 |

NOTE: You will note that 67.2 of all rims produced were for balloon tires. Of the remaining 32.8, 21.6 were Clinchers, 4 per cent were Motorcycle Rims and 4.3 were Truck Rims.

NOTE: There were 22-27x4½ S.S. Rims produced experimentally during May.

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## Vulcanizing Method Patented

Thomas W. Miller, Ashland, Ohio, was recently granted U. S. Patents No. 1,537,858 and 1,537,859 on a method of vulcanizing rubber. The method consists in subjecting a rubber compound, such as rubber, a metallic oxide and sulphur, in a closed chamber while under a vulcanizing heat, to the action of a current of air containing an organic accelerator.

# The Plantation Rubber Industry

## Introduction to the Report of Survey Made by the Department of Commerce at Instigation of Congress

OUR rubber imports in 1923 were valued at $185,000,000, or about 72 per cent of the whole world's production. Crude rubber ranked fourth among our imports, only raw silk, sugar, and coffee exceeding it in value. Three great industries are dependent upon the raw material — rubber manufacturing, automotive, and oil, (through its dependence upon the automotive industry). The aggregate capital invested in these industries exceeds $13,000,000,000.

On March, 1923, the Department of Commerce was instructed by Congress "to investigate and report on the possibilities of developing the rubber-plantation industry in the Philippines and Latin America"; under the same appropriation, it was instructed to "investigate the conditions of production and marketing of other essential raw materials for American industries."

These investigations had become peculiarly necessary, due to the very general tendency abroad to form combinations for the control of production and prices of many materials which we do not ourselves produce and for which we are dependent upon imports. The investigations so far conducted have disclosed such combinations in sisal (for binder twine), potash, nitrates, coffee, tannins, and other matrials.

These foreign combinations require careful consideration, to the end that we may find means to stimulate competitive production as well as to provide measures by which our consumers may set up such counter action as will protect them.

### 93 Per Cent from Plantations

Since 1905 a constantly diminishing share of the world's demand has been met by wild rubber, until in 1923 more than 93 per cent of the total supplies came from planted areas in the Middle East. Of the total acreage of plantation rubber Great Britain controls 69 per cent through domicile in British colonies, and a total of 75 per cent through domicile in British territory and British ownership of plantations in Netherlands India. Opposite this centralized production in the hands of one nation is centralized consumption, for the United States, due to the enormous number of motor cars in use, regularly consumes more than 70 per cent of all the rubber produced.

As a result of an overproduction of rubber and unprofitable prices therefor in 1921 and 1922, a restrictive law upon exports was applied in the British possessions, effective November 1, 1922.

The measure, known as the Stevenson Restriction Act, was one of the actions which called the attention of the American public to their dependence upon one distinct region mainly under control of one government for a commodity so essential to our national welfare. We should consider the possible effect upon ourselves.

The possible result of such action in restraint of production and distribution is of twofold order: First, its effect upon price; second, its effect upon present and future exports and therefore upon our future supplies.

It requires from four to six years for rubber trees to come into bearing. The preparation and planting of new rubber plantations in the Middle East has been greatly retarded by the unfavorable market conditions. Although there is some planting antedating the restrictions which is yet to come into bearing, the stifling of planting by unprofitable years bids fair to result in a world shortage after a few years. A careful investigation into the future world demand for rubber undertaken by the Rubber Association of America with the cooperation of the Department of Commerce indicates that this shortage is likely to be felt by 1928 or 1930, and may lay a heavy burden on the American consumer.

The producing industries of the world would be much better off in the long run if combinations in restraint of international trade were abandoned on all sides. In general, their effect is to hoist both the producing and consuming industries upon artificial bases, ultimately resulting in economic difficulty to producers as well as consumers. The stifling of consumption, stimulation of rival production, the use of substitutes, and the paralyzing of industry generally are their ultimate results.

HERBERT HOOVER,
*Secretary of Commerce*

### Introduction

The plantation rubber industry in the Middle East originated from seeds of *Hevea brasiliensis*, otherwise known as Para rubber, collected in Brazil by Sir Henry Wickham in 1876, germinated in Kew Gardens, London, and sent from there to the East. Other rubbers such as Castilloa (*Castilla spp.*), Ceara (*Manihot glaziovii*), and Rambong (*Ficus elastica*) are not dealt with in this report, as they have practically disappeared from cultivation.

It will be noted that 69 per cent of the acreage is domiciled in British possessions (British Malaya, Ceylon, India, Burma, and British Borneo), 29 per cent in Netherlands India (Sumatra, Java, and Dutch Borneo), and 2 per cent in the French colony of Indo-China.

### Distribution of Area

Table A shows the acreage planted in the different States and the area tappable at the present time. Figure 4 presents the planted-area data in graphic form.

TABLE A.—AREA PLANTED AND TAPPABLE,* TOTAL MIDDLE EAST

| Countries | Total area planted† *Acres* | Area tappable‡ *Acres* |
|---|---|---|
| Ceylon | 445,000 | 423,000 |
| India and Burma | 124,000 | 119,000 |
| Malaya | 2,275,000 | 2,061,000 |
| North Borneo, Sarawak, and Brunei | 117,000 | 87,000 |
| Total British | 2,961,000 | 2,690,000 |
| French Indo-China | 86,000 | 68,000 |
| Netherlands India | 1,249,000 | 1,092,000 |
| Total other | 1,335,000 | 1,160,000 |
| Total Middle East | 4,296,000 | 3,850,000 |

*Includes both European and native-owned rubber.
†To end of 1923.
‡In 1924; 5 years old or over.

This table shows the total planted area in British territory (Ceylon, India, Burma, Malaya, North Borneo, Saranak, and Brunei) to be 2,961,000 acres. In addition British-owned plantations in Netherlands India aggregate 269,000 acres; making 3,230,000 acres, or 75 per cent of the total planted area of the Middle East, under British control.

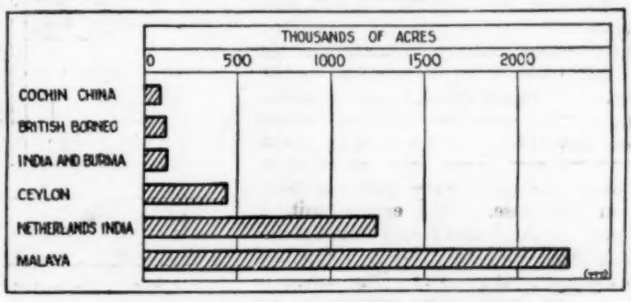


**Fig. 1. Geographical Distribution of Area Planted**

Table B shows the production (net exports) of plantation rubber from the different countries of the Middle East, with the percentage contributed by the British colonies. The quantities represent long tons of 2,240 pounds—the "ton" used throughout this report unless specifically stated otherwise. Figure 5 gives the total exports in diagram form.

TABLE B. PRODUCTION (NET EXPORTS) OF PLANTATION RUBBER, TOTAL MIDDLE EAST

| | British possessions | | | | | | | | Grand total | British share of |
|---|---|---|---|---|---|---|---|---|---|---|
| Years | Ceylon | British Malaya | India and Burma | British Borneo | Total British | Netherlands India | French Cochin-China | Middle East | grand total | |
| | *Tons* | *Tons* | *Tons* | *Tons* | *Tons* | *Tons* | *Tons* | *Tons* | *Per cent* | |
| 1905 | 70 | 104 | .... | .... | 174 | .... | .... | 174 | 100 | |
| 1906 | 145 | 432 | .... | .... | 577 | .... | .... | 577 | 100 | |
| 1907 | 250 | 905 | .... | 2 | 1,157 | .... | .... | 1,157 | 100 | |
| 1908 | 390 | 1,402 | .... | 4 | 1,796 | .... | .... | 1,796 | 100 | |
| 1909 | 681 | 2,698 | .... | 7 | 3,386 | .... | .... | 3,386 | 100 | |
| 1910 | 1,522 | 5,713 | .... | 34 | 7,269 | .... | .... | 7,269 | 100 | |
| 1911 | 3,061 | 10,895 | 332 | 95 | 14,383 | .... | .... | 14,383 | 100 | |
| 1912 | 6,628 | 20,540 | 643 | 277 | 28,088 | 2,025 | .... | 30,113 | 93 | |
| 1913 | 11,325 | 33,213 | 1,040 | 608 | 46,186 | 5,535 | .... | 51,721 | 89 | |
| 1914 | 15,336 | 46,430 | 1,343 | 883 | 63,992 | 8,970 | 191 | 73,153 | 87 | |
| 1915 | 21,787 | 70,516 | 2,161 | 1,631 | 96,095 | 17,811 | 371 | 114,277 | 84 | |
| 1916 | 24,334 | 97,837 | 2,781 | 3,058 | 128,010 | 30,443 | 540 | 158,993 | 81 | |
| 1917 | 32,290 | 134,788 | 3,992 | 4,312 | 175,382 | 44,889 | 916 | 221,187 | 79 | |
| 1918 | 20,665 | 107,691 | 4,377 | 4,193 | 136,926 | 43,345 | 529 | 180,800 | 76 | |
| 1919 | 45,010 | 199,545 | 6,554 | 6,375 | 257,484 | 88,189 | 2,901 | 348,574 | 74 | |
| 1920 | 39,532 | 174,322 | 6,376 | 5,851 | 226,081 | 75,522 | 3,068 | 304,671 | 74 | |
| 1921 | 39,342 | 151,001 | 5,305 | 5,311 | 200,959 | 72,227 | 3,560 | 276,746 | 73 | |
| 1922 | 46,694 | 212,380 | 4,854 | 7,661 | 271,589 | 102,171 | 4,472 | 378,232 | 72 | |
| 1923 | 37,111 | 183,812 | 6,417 | 10,094 | 237,434 | 137,158 | 5,146 | 379,738 | 63 | |
| 1924* | 37,338 | 152,320 | 7,161 | 8,208 | 205,027 | 175,298 | 6,378 | 386,703 | 53 | |

*Estimated; subject to later revision.

This table shows that during recent years the proportional percentage of plantation rubber furnished by British territory has been decreasing gradually as other producing regions come into bearing. The reduction of the exports of the British possessions from 72 per cent of the total for the Middle East in 1922 to 63 per cent in 1923 and to an estimated 53 per cent in 1924 was due to the restriction on exportation imposed by the British Colonial Office. During the last two years increasing quantities of wet native-plantation rubber have been shipped from Netherlands India, most of which went to British Malaya and was there remilled before reshipment to consuming markets. Also, the net exports of British Malaya are determined by subtracting the imports (largely wet rubber) from the gross exports. If allowance were made for moisture in native rubber, the figures for British Malaya would be higher and those for Netherlands India lower than those shown in the table; also the percentages coming from British colonies would be increased accordingly.

## British Restriction On Exports

The cumulative effect of an increasing production of crude rubber and a decreasing world demand therefor during the years 1920-1922 brought about a crisis in the industry, the price having fallen in New York to an average of about 16 cents and a minimum of 11½ cents a pound in 1921. Various

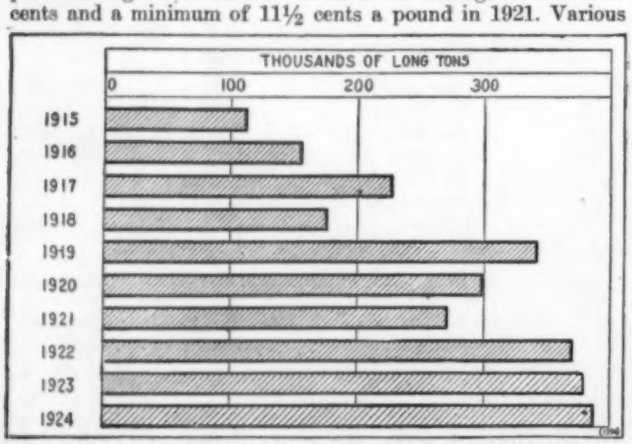


Fig. 2. Exports of Plantation Rubber from the Middle East

attempts were made by producers to reduce output by voluntary cooperation; these failing, finally a legislative restriction upon the exports of rubber from British possessions was recommended by the Stevenson committee appointed by the British Colonial Office.

This restriction act became law November 1, 1922. It provided for a "standard production" for each rubber estate, based on actual output of that estate for the year ending October 31, 1920, plus an allowance for production from new areas. A certain percentage of the total standard production was allocated for exportation in each quarter-year, depending on the average price of rubber during the preceding quarter. For the first three months during which the restriction act was in force, exportation was set at 60 per cent of the total standard production. An average price of 1s. 3d. to 1s. 6d. (roughly 30 to 36 cents) during a stated quarter would bring about a release of an additional 5 per cent of the standard production; an average price of 1s. 6d. to 1s. 9d. (about 36 to 42 cents) would result in the release of 10 per cent. Inversely, if the price should average less than 1s. a pound during a 3-months period, a reduction of the percentage of release by 5 per cent was provided for the following quarter.

Reference to Table B will show that there has been no appreciable difference in the exports of the Middle East of 1922, 10 months of which were without legislative restriction and those of 1923 and 1924, with restriction in effect in the British colonies, the totals being respectively 378,000, 380,000 and 386,000 tons. The loss due to restriction in exports from British Malaya and Ceylon is counter-balanced by increased production in Netherlands India. Had the British colonies produced and exported to their capacity in 1924, it it is estimated that 100,000 more tons would have reached the markets of the world during this year from this source.

## Effect Of Restriction On Prices

The following table gives the average quarterly price of ribbed smoked sheet in New York from the first quarter of 1915 to the closing quarter of 1924:

TABLE C.—AVERAGE NEW YORK PRICE FOR RIBBED SMOKED SHEET

| | Average price per pound | | | |
|---|---|---|---|---|
| Years | January-March | April-June | July-September | October-December |
| | *Cents* | *Cents* | *Cents* | *Cents* |
| 1915 | 65½ | 61½ | 60½ | 68½ |
| 1916 | 88½ | 71½ | 59 | 69¼ |
| 1917 | 81 | 79⅝ | 66 1-6 | 59½ |
| 1918 | 56 1-6 | 65¼ | 61½ | 55½ |
| 1919 | 53¾ | 45 | 43¾ | 52¼ |
| 1920 | 50¼ | 40 5-6 | 30 | 19 1-6 |
| 1921 | 18⅛ | 15½ | 14 1-6 | 17 5-6 |
| 1922 | 16 | 15½ | 14½ | 23⅝ |
| 1923 | 34 1-6 | 29½ | 28 | 26⅞ |
| 1924 | 24½ | 20½ | 24¾ | 34½ |

The above table shows that up to the last quarter of 1920 the average quarterly price did not fall below 30 cents a pound, and that the drop from that time coincided with the general depression in business and the consequently reduced demand for rubber.

## Depletion Of Stocks On Hand

During the depression, and until restriction went into effect on November, 1, 1922, the average quarterly price of rubber was below 20 cents, and a minimum price of 11½ cents was touched in June and July, 1921. The date of the adoption of restriction happened to coincide with an improvement in business, and both together forced the price of crude rubber up to over 25 cents for the year 1923, the maximum price reached being 37⅛ cents; the average price during the first quarter of 1923 was 34 1-6 cents. Shipments of rubber from world producing centers during 1923 were less than world consumption, and the difference was made up by drawing on the accumulation of stocks of dealers and manufacturers which had been piled up during the business depression.

During the first part of 1924 a temporary slackening in the rubber manufacturing industry resulted in the price for the first three quarters averaging between 20 and 25 cents and in May rubber sold as low as 17⅜ cents. The sharp recovery in business in the fall, together with the still further depletion of stocks, carried the price near 40 cents at the end of December.

The world's stocks have now been reduced to a dangerous minimum, [illegible], and this condition, together with greatly increased activity in rubber manufacturing in both the United States and Europe, has forced the price up to a higher level than

has been the case since the business depression began in the latter part of 1920.

The following table shows the world production (net exports) of both plantation and wild rubber from 1905 to 1923, by amount and per cent:

TABLE D.—WORLD PRODUCTION, PLANTATION AND WILD RUBBER

| Years | Total plantation | Total wild (tropical America and Africa) | World production Total | Plantation | Wild |
|---|---|---|---|---|---|
| | *Tons* | *Tons* | *Tons* | *Per cent* | *Per cent* |
| 1905 | 174 | *59,320 | 59,494 | 0.3 | 99.7 |
| 1906 | 577 | 62,004 | 62,581 | 0.9 | 99.1 |
| 1907 | 1,157 | 66,013 | 67,170 | 1.7 | 98.3 |
| 1908 | 1,796 | 64,770 | 66,566 | 2.7 | 97.3 |
| 1909 | 3,386 | 70,370 | 73,756 | 4.6 | 95.4 |
| 1910 | 7,269 | 73,477 | 80,746 | 9.0 | 91.0 |
| 1911 | 14,383 | 68,446 | 82,829 | 17.4 | 82.6 |
| 1912 | 30,113 | 73,834 | 103,947 | 29.0 | 71.0 |
| 1913 | 51,721 | 63,280 | 115,001 | 45.0 | 55.0 |
| 1914 | 73,153 | 48,052 | 121,205 | 60.4 | 39.6 |
| 1915 | 114,277 | 54,740 | 169,017 | 67.6 | 32.4 |
| 1916 | 158,993 | 51,086 | 210,079 | 75.7 | 24.3 |
| 1917 | 221,187 | 56,751 | 277,938 | 79.6 | 20.4 |
| 1918 | 180,800 | 36,711 | 217,511 | 83.1 | 16.9 |
| 1919 | 348,574 | 50,424 | 398,998 | 87.4 | 12.6 |
| 1920 | 304,671 | 36,464 | 341,135 | 89.3 | 10.7 |
| 1921 | 276,746 | 23,903 | 300,649 | 92.0 | 8.0 |
| 1922 | 378,232 | 27,878 | 406,110 | 93.1 | 6.9 |
| 1923 | 379,738 | †26,685 | †406,423 | 93.4 | 6.6 |
| 1924† | 386,703 | 28,000 | 414,703 | 93.2 | 6.8 |

*Excluding Venezuela.
†Estimated.

The above table shows the growing importance of plantation rubber over wild rubber. The peak of production of wild rubber was reached in 1912, when nearly 74,000 tons were exported—71 per cent of the world total for that year.

In 1914, the production of plantation rubber for the first time exceeded that of wild, constituting 60 per cent of the total net exports, which aggregated 121,205 tons. In 1923, 93.4 per cent of the total of 406,000 tons was plantation and 6.6 per cent wild. Reduction in the amount of wild rubber exported occurred during the war, mainly in Africa. A more decided reduction in the amount in both Africa and tropical America was felt when the price of rubber fell sharply as the result of the general business depression in 1921.

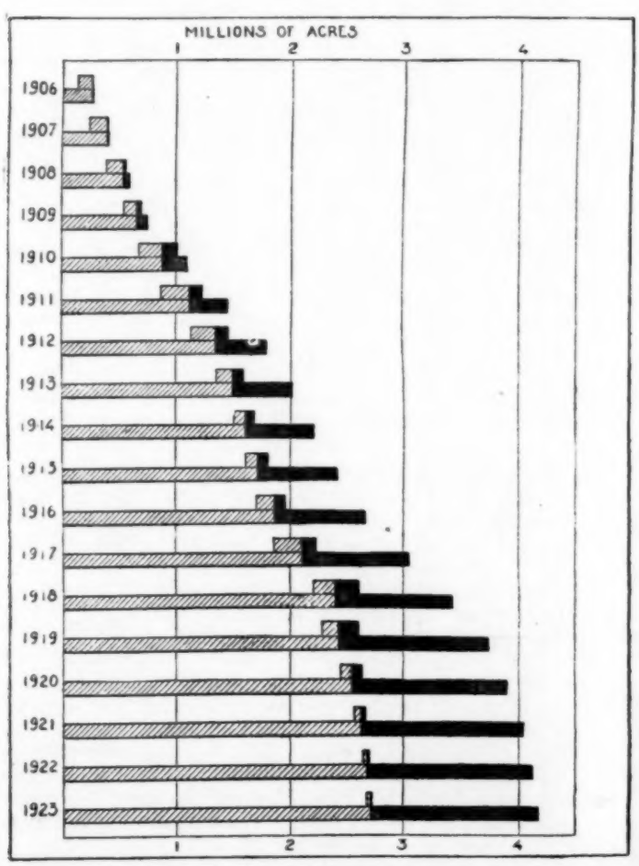


**Fig. 3. Area Planted with Rubber. The Hatched Bar Denotes European-owned Rubber; the Shaded Bar Native-owned. The Superimposed Bars Show Amount of Planting Done Each Year**

Of the total area planted in the Middle East two-thirds are owned by European and American capital. There has been a steady though gradual increase in the percentage owned by natives.

Figures 3 and 4 trace the growth of relative ownership of the planted area.

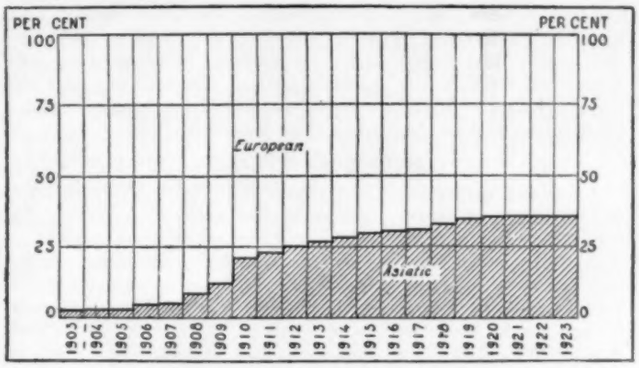


**Fig. 4. The Shaded Portion Shows the Percentage of the Total Planted Area Owned by Asiatics**

There are as many variables in the cost of planting and maintaining an acre of rubber to the producing stage in the Middle East as there are in apple orchards over different parts of the United States. The purchase price of land, the density of tropical jungle to be cleared, the investment in buildings and equipment, variations in wages and in the efficiency of the different races, and a score of minor items enter into any estimate. For well-managed, foreign-owned estates in the Middle East, the cost to-day of planting and maintaining an acre of rubber to the producing stage would vary from $150 to $325 U. S. currency, to which must be added interest during the growing period. With interest included, the cost would probably range between $200 and $400 per acre.

## Cost of Production

In production costs also there is great divergence. Location, yield per acre, cost of labor, health conditions, efficiency, and management all vary over a wide field. Moreover, available costs present much difficulty in comparison because of difference in accounting methods and in the items included as to overhead, selling costs, depreciation, amortization of the life of the plantation, etc. Furthermore, years of low prices make for economy, perhaps some of it at the expense of the future; while years of high prices stimulate extravagance.

The average f. o. b. cost (Middle Eastern ports) for 1922 (a year of severe economies) of 129 estates in Ceylon, Malaya, and Netherlands India was 12.7 cents U. S. This does not include amortization, head-office, shipping, marketing, and some other costs. Again, the published average all-in cost for 1922 of 13 Ceylon companies was 13.4 cents U. S.; for 60 Malaya companies, 15.1 cents; for 18 Netherlands India companies 17.4 cents; and for 12 Borneo companies, 16.5 cents. This included freight, insurance to consuming markets, and head-office expenses.

## Relation of Yield to Cost

While the foregoing figures are quoted in "cost per pound", it was found in analyzing costs that "operating cost per acre" was the better basis upon which to work in most instances. "Cost per pound" varies with the yield per acre, while "operating cost per acre" should be approximately the same, given

1 Published information gives the stocks on hand in the United Kingdom at the close of 1924 as 29,500 tons, the lowest on record since the end of August, 1920, and a decrease during the year of nearly 31,000 tons. Stocks in the hands of dealers and manufacturers in the United States at the same date amounted to 57,700 tons, a decrease of about 19,000 tons during the year—or 50,000 tons for these two countries alone.

It is difficult to estimate the consumption of rubber for 1924 at this time, but from information on file in the Bureau of Foreign and Domestic Commerce it would appear likely that world consumption for the year will reach at least 475,000 tons and total exports from producing centers possibly 415,000 tons. (See Table D.) Consumption in the United States for 1924 has been placed by reliable commercial authorities at 335,000 tons, against 305,000 tons for 1923, an increase of 30,000 tons.

similar topographical and labor conditions, regardless of the yield. This being true, the larger the yield per acre the lower the production cost per pound.

Where the planter's general aim is to conserve his young growth by protection against disease and overtapping, a yield of 400 pounds or more per acre can be reached by the time the trees are 10 years old and maintained for a number of years thereafter, provided soil and climatic conditions are favorable. There are large acreages, however, where the physical conditions are much less favorable, and on such the 400-pound-yield stage can not be reached. Moreover, the non-conservation of young growth against overtapping and disease is likely to result in yields below 400 pounds for mature plantations and in shortening their producing life.

## Return Per Pound

A careful analysis of the items making up costs, with what is believed to be an adequate allowance under all headings, for the delivery of rubber to the consuming markets including amortization but excluding profit taxes, corporation taxes, and bonuses, seems to indicate that fairly well managed plantations with an output of around 400 pounds per acre would be covered by a realization of 16 to 17 cents U. S. per pound, delivered in New York, and these costs might be lowered by larger-unit operations. Favored plantations would earn small profits within such a return; these include (a) estates where the yields are more than 400 pounds per acre and (b) those favored with good management, location, and labor supply that yield at least 400 pounds, or less than this amount if conditions are exceptionally good.

The additional return necessary to yield a stimulative profit of say, 15 per cent on capital invested in such well-managed plantations would amount to 7½ cents a pound for the comparatively few plantations with a capital cost as low as $200 U. S. per acre and 15 cents for plantations with a capital cost of $400 U. S. per acre. The larger class, consisting of those plantations whose capital costs range between $200 and $400 per acre, would, of course, net a return of between 7½ and 15 cents. With such profits for the well-managed and well-situated lands, even the marginal lands (that is, those in less favorable position as regards location, yields, management, etc.) would give some return on the investment made in them.

## Capital Investment

Following is an approximation of the capital invested in rubber plantations in the Middle East and its origin, stated in American currency:

| | | | |
|---|---|---|---|
| Great Britain | $505,000,000 | Denmark | $11,000,000 |
| Netherlands | 130,000,000 | All other, including native-owned areas | 112,000,000 |
| France and Belgium | 30,000,000 | | |
| Japan | 42,000,000 | | |
| United States | 32,000,000 | Total | 876,000,000 |
| Shanghai | 14,000,000 | | |

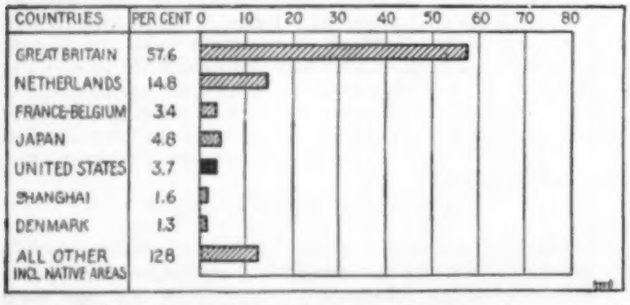


**Fig. 5. Relative Investment of European, American, Japanese and other Capital in Plantations**

The financial history of a number of companies was traced back to 1909. In that year figures were compiled for 17 companies; this number was gradually increased to 52 in 1922. During the greater part of this period prices ruled at a high level; on the other hand much of the area was immature or had not reached the full-bearing stage. Over this 14-year period an annual average profit of 26 per cent on the issued capital was earned. The issued capital (which averaged over, rather than under, the actual capital spent) was earned three and a half times.

Dividends averaging 22 per cent per year were paid—over three times the issued capital. The number of companies paying dividends during the depression is of interest: In 1920, 21 out of 51; in 1921, 22 out of 51; in 1922, 46 out of 51.

Figure 6 traces the variation in issued capital, net profits, and dividends over the period 1909-1922.

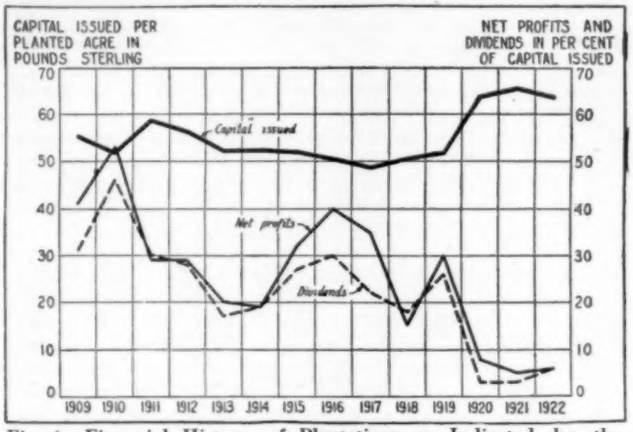
CAPITAL ISSUED PER PLANTED ACRE IN POUNDS STERLING
NET PROFITS AND DIVIDENDS IN PER CENT OF CAPITAL ISSUED
Capital issued
Net profits
Dividends
0 10 20 30 40 50 60 70
1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922

**Fig. 6. Financial History of Plantations as Indicated by the Average Capital Issued per Acre. Profits Earned in Per Cent of Capital Issued and Dividends Paid in Per Cent of Capital Issued**

In view of the rapid increase in the world consumption of rubber some forecast of the potential future production from this, the greatest rubber-producing area, is of importance. This production will depend in the main upon three factors:

(a) Acreage now planted but not yet in bearing.
(b) Future planting.
(c) Governmental restrictions on output.

Rubber is not an annual crop. It requires from 4 to 6 years to come into bearing and from 10 to 12 years to reach the so-called full-bearing stage.

Table A shows that out of approximately 4,300,000 acres planted in the Middle East about 3,800,000 are of tappable age, and, subject to other conditions, the output could be expected to expand at least in this proportion. Owing to the fall in price in 1922, due to a slackening in the world demand, with a consequent oversupply, there has been comparatively little planting undertaken during the last three years. Calculation of future potential output, based on the assumption of full exports and the maturity of the present planted areas, would indicate approximately the following:

TABLE E.—ESTIMATES OF FUTURE POTENTIAL OUTPUT OF PLANTATION RUBBER FROM PRESENT PLANTED AREA, TOTAL MIDDLE EAST

| Years | Tons | Years | Tons |
|---|---|---|---|
| 1924 | 507,500 | 1928 | 613,000 |
| 1925 | 551,600 | 1929 | 617,000 |
| 1926 | 584,000 | 1930 | 621,000 |
| 1927 | 602,000 | | |

By "potential output" is meant the quantity of rubber the Middle East could produce from the present planted area with restriction removed and with ample labor and superintendence available. It is highly improbable that the potential output shown above could be reached for several years were estates free to produce to capacity, because of the difficulty of securing an adequate labor supply. The estimates are thought to be generous.

With the above table however, must also be taken into consideration the probable course of world demand. An estimate of future consumption or a forecast of demand and of market conditions can not be attempted by the Department of Commerce, which can concern itself only with existing facts. Nevertheless, an exhaustive study of the probable consumption of rubber during the next few years was undertaken by the Rubber Association of America, which publishes the following estimates: 1a

1a See pages 5 and 24, and Chart 6 on page 23 of "Analysis and Forecast of the World's Rubber Consumption and Comparison with Production Stocks Annually to 1930," by Ray B. Prescott, prepared and distributed by the Rubber Association of America (Inc.), May, 1924.

TABLE F.—FUTURE POTENTIAL WORLD PRODUCTION AND CONSUMPTION AS ESTIMATED BY RUBBER ASSOCIATION OF AMERICA

| Years | Crude rubber (plantation and wild) Estimated world production *Tons* | Estimated world consumption *Tons* |
|---|---|---|
| 1924 | 531,000 | 505,000 |
| 1925 | 574,000 | 540,000 |
| 1926 | 606,000 | 575,000 |
| 1927 | 623,000 | 608,000 |
| 1928 | 633,000 | 641,000 |
| 1929 | 637,000 | 672,000 |
| 1930 | 641,000 | 703,000 |

Concerning the figures given above, the author, Mr. Prescott states:

> In forecasting there is to be expected nearly always some variation from the normal or calculated figures giving the most probable results. With this in mind all users of this report should make allowances for probable variation of about 10 per cent from these forecasts of rubber consumption. Or, in other words, these figures can be assumed as correct within a probable variation of 10 per cent, except under unusual conditions.

Because of restriction in British possessions, the 1924 exports of plantation rubber from Middle East will fall far short of what those regions could have produced without restriction. The consumption of rubber in this year, conservatively estimated at 475,000 tons, is well within the 10 per cent variation allowed for by the statistician and much above the exports from the producing regions.

The greatest variable in the estimated production figures given in Table F is wild rubber. The probable production of wild rubber has been included at an average of about 20,000 tons a year. Under the stimulus of high prices, somewhat larger quantities of rubber from wild areas may be expected, thus delaying the time when consumption will have overtaken production. However, only a substantially higher price could force the production of wild rubber to double the estimated 20,000 tons. The potential production of wild rubber is very great, but increased quantities must come from areas so inaccessible that they can be profitably exploited only when crude rubber is bringing a very attractive price in the world market.

# X-Ray Spectographs of Rubber Samples

## Crystals, not Present Before, Were Seen with the X Ray when Rubber was put under Tension

IN an endeavor to establish a new method for testing rubber, a large number of rubber samples were collected and investigated with the result that a method was developed which seems to possess important advantages.

The most important conclusion drawn from these investigations was that the spectrograph of rubber obtained with the X ray changes according to the amount of stretch or tension to which the material is subjected. In the unstretched state, at any rate, when the rubber was first warmed, plasticized or vulcanized at an elevated temperature, the X ray spectrum is that of an amorphous substance such as glass or liquids. Up to a certain critical stretch, which in the case of the non-vulcanized Hevea rubber was found to be one hundred per cent, the X ray pictures of the rubber remains an "amorphous ring". But from that point on crystalline interferences appear. These are in the form of sharp pointed spots which seem to indicate that actual crystals exist in the rubber mass. The intensity of the crystalline interference is stronger, the greater the tension applied to the sample, and when the rubber is very considerably stretched, then it must be concluded that it is constituted in an appreciable part of these so-called crystals.

The size of the apparent crystals was determined and it was found that this was commensurate with a high molecular weight substance such as rubber is. Hence the question seems to have arisen whether or not what was measured here was actually the rubber molecule or at least the elementary units which are combined to make the molecule. The novelty of this investigation is still too little understood to be able to reach any conclusion along these lines.

The distribution of the "crystalline interferences", the so-called fiber diagram, indicates that the "crystalline" material consists of numerous small "crystals" in the stretched rubber. These crystalline particles are arranged in lines parallel to one another and to the direction in which the rubber is stretched. It is remarkable that this parallel arrangement takes place at the very first moment that the presence of the crystal is noted.

It is interesting to take a rubber band, which is stretched and held under tension for a long time, and then to fix its length about twenty to thirty minutes after tension has been applied. It will then be found that "crystalline interferences" still exist in one part of the rubber, but not in another

A series of tests were carried out which yielded the conclusion that the "crystals" were not present in the unstretched rubber, but were formed at the moment that the rubber was put under tension. It must therefore either be concluded that the unstretched rubber mass must be an agglomeration of strongly deformed crystals which are arranged in regular form only when the rubber is stretched, or that pseudo-crystalline amorphous fibers are formed within a true amorphous substance. It may also be considered that we are here dealing with crystallization of an amorphous substance. But it remains that the effect of tension is to cause to be arranged in regular order a mass of amorphous particles which assume a crystalline form. This is an entirely new phenomenon.

A new method for testing rubber has accordingly been developed from these observations. This new method is of great interest and importance for it brings to light many interesting facts. The physical investigation of rubber in this manner serves to expain a certain phenomenon which has remained unexplained up to the present time, namely, that when rubber is stretched heat is evolved. It is known that every amorphous substance, which becomes crystalline, produces heat. This is what takes place in the stretching of rubber.

Then again when the tension curve is drawn it may be seen that shortly before rupture takes place the rubber substance exhibits a decreasing degree of extensibility for every additional stretching load applied to it, and nevertheless the rubber remains within the limits of elasticity; in other words it does not flow. It may be concluded at this point all the material which is suited for crystallization has been crystallized, so that the only additional extension that can take place in the rubber is through stretching of the crystals themselves.

Another way in which these investigations on the spectro-radiographic examination of samples of rubber are of considerable importance is in the solution of problems that are concerned with the mechanism of the vulcanization process. Furthermore the information gained from this new method of examining rubber samples is also of great significance in connection with the action of inorganic substances added to the rubber mass.

Thus for example in the case of the mineral fillers, it has been found that certain of them possess the faculty of arranging themselves parallel to the direction of the tensile force when the rubber sample is stretched. It is seen that the crystals of the fillers, for example magnesium carbonate, are arranged parallel to each other and to the direction of stretch. This takes place when the rubber is tensed, but on the other hand when other crystals such as magnesium oxide or zinc oxide are present in the rubber mass, such a phenomenon is not observed at all.

*Chemiker Zeitung*, 1925, 353-4.

# EDITOR'S REVIEW DESK

**Books** **Trade Catalogs** **Articles**

REPORT OF COMMITTEE D-11 ON RUBBER PRODUCTS. To be presented at the Twenty-eighth Annual Meeting of the American Society for Testing Materials, to be held at Atlantic City, N. J., June 23 to 26.

Adhering to the opinion expressed in the last report, the committee feels that there is little need for additional standards because the main rubber products have been reasonably well provided for. Owing to frequent requests, however, specifications for rubber disks used in alarm valves on sprinkler systems have been prepared. The service of these disks is such that they are wet on both faces at all times. The disks should be made of a properly vulcanized rubber compound that will meet all requirements of these specifications, with faces parallel and smooth and free from pitting, blisters, air checks and other surface defects. These disks should be either molded or cut from sheet rubber, and made in accordance with the table given in the report. Items covering method of analysis, physical properties and tests, dimensions, marking and inspection and rejection are also included in the report.

* * *

THE RESILIENT ENERGY CRITERION AS APPLIED TO THE SHAPE OF THE RUBBER STRESS-STRAIN CURVE. By William B. Wiegand, Ames, Holden Tire & Rubber Co., Ld., Kitchener, Ont. Published in *Industrial and Engineering Chemistry* for June.

Tensile strength, elongation at rupture or at a given impressed stress are some of the criteria in use for assessing and comparing the physical properties of rubber specimens. The criterion which possesses the most important group of physical properties, the author of this article finds, is the energy criterion. This differs from those formerly in use in that it evaluates the entire stress-strain history of the sample from zero to ultimate deformation and is the best single index of resistance to abrasive wear. In applying the same general method to the evaluation of certain properties associated with the shape of the rubber stress-strain curve, the reader should remember that the tensile product may be regarded as an energy index, representing twice the energy of resilience of the sample had its stress-strain curve been linear.

The stress-strain curves of soft rubber mixings are concave to load axis and the degree to which any given curve approaches or departs from linear conditions cannot be completely assessed by a statement of the stress at 100 per cent elongation. It has been found that the nearer the rubber stress-strain curve approaches that of the rigid structural materials the more readily will the properties and behavior of rubber members be computed.

From the standpoint of abrasive wear, a property of importance in every branch of the industry in which the rubber technologist is concerned, approximation to linear law usually coincides with superior performance if other properties remain unimpaired.

* * *

UNITED STATES GOVERNMENT MASTER SPECIFICATIONS FOR: Rubber Catheters, Rubber Finger Cots, Rubber Pillowcases, Politzer Bags, Colon Tube, Stomach Tube, Rubber Ice Bags, Rubber Dam, Surgeons' Rubber Gloves, Rubber Bandages, Rubber Tips for Crutches, Helmet-Shaped Ice Bags. Circulars of the Bureau of Standards, Department of Commerce.

The specifications given in these circulars were officially distributed by the Federal Specifications Board on Nov. 5, 1924, for use in the purchase of various rubber articles. Material and workmanship necessary to meet Government specifications are given together with a brief summary of requirements, including rubber content, tensile strength, ultimate elongation and resistance to hot air. Sampling, packing and marking are also discussed.

* * *

ANCHOR PACKINGS. Catalog J. 92 pp. 4½ x 6¼". Issued by The Anchor Packing Company, Philadelphia.

A numerical index and a division index have been inserted in this catalog with the result that the dealer interested in the products described is able to locate his article with ease. Special directions are also given as to method of ordering, which should prove time-savers. The balance of the catalog is devoted to description of the many types of packing and belting manufactured by this company.

* * *

THE TRIUMPH OF PLUCK AND VISION. Published in *The Industrial Digest* for June.

Twenty-five years ago Harvey S. Firestone bought the carriage tire department of a manufacturing plant that was "just breaking even". This year the Firestone Tire & Rubber Co. celebrates the silver anniversary of the foundation of its business which has evolved from the department which Mr. Firestone took over into the largest exclusive tire manufacturing plant in the world. But behind this achievement is the personality of its founder and a story of American vision and determination. Born in an Ohio farming community in 1868, Mr. Firestone spent the first eighteen years of his life at his birthplace, his education consisting of the usual years in the country school supplemented by a short term in a Cleveland business institution. A clerkship in a Columbus coal office was given up for a position of traveling salesman in the flavoring extract line. This, not offiering the opportunity that he wished, Mr. Firestone became shipping clerk for the Columbus Buggy Co. and while with this company, the idea of rubber tires was introduced and

(*Continued on Page* 214)


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*THE MARKET PLACE Section Continued on Second Page Following.*

# MARKETS

## Cottons and Fabrics

NEW YORK, June 15, 1925

The Department of Agriculture published its estimate of condition on May 25. The figure, 76.6, was slightly above average expectations and lead to a revival of bearish sentiment which was accentuated by the readjustment of the acreage planted last year to 42,641,000 acres instead of 41,490,000, the Department's previous estimate. If the Government, in its acreage estimate to be made at the beginning of next month, confirms the general expectation that there will be an increase of 5 per cent, this percentage applied to last year's revised figures will roughly indicate the planting of 44,773,000 acres this year.

The market's quick recovery of the greater part of the loss which occurred when trading was resumed after the issue of the report reflected the absence of a speculative long interest, the reappearance of trade support and apprehension concerning the continued drought in South Central Texas.

There is, at present, no reason to expect that a 14,000,000 bale crop will prove burdensome, the abnormal weevil emergence in the Southeast and the lack of sub-soil moisture in a large part of Texas may easily result in a yield considerably below this figure.

Interest is rapidly becoming centered on new crop progress and fluctuations during the past week may be attributed almost entirely to the effect of weather news on sentiment. An active covering movement, inspired by reports of renewed drought, was followed by almost equally active profit taking and short selling as a result of beneficial rains which occurred over a large part of the belt.

The consensus of opinion is that since the last Government condition report was compiled, crop prospects have slightly improved. However, insufficient weight appears to be given to the fact that, in Texas, a very large area, estimated to have produced last year upwards of 2,000,000 bales, is still lamentably short of sub-soil moisture. If this deficiency is not compensated for by well-distributed rains during the Summer a small yield must inevitably result.

Reports from domestic dry goods markets continue to be pessimistic. The recent hot weather has resulted in an active retail distribution of seasonable fabrics, but the demand for staple goods continues to be limited and increasing efforts are being made to adjust production to consumers' requirements. The Government report on domestic mill consumption during May, which will be issued within the next few days, is expected to approximate 550,000 bales which will compare with 597,104 in April, 413,967 in May 1924 and a five year average of 502,450. Impressed by the record acreage and by the favorable outlook, spinners, both here and in Europe, show but little interest in new crop cotton, preferring to await further developments in the hope that better opportunities for the purchase of their requirements may be offered.

Statistics continue to indicate that there will be a very small carry-over and, bearing in mind the many dangers to which the new crop may be exposed, it appears imprudent to anticipate any decided increase in yield until most of these dangers have been eliminated.

**New York Cotton Prices**

| | Open | High | Low | Last Sale | Close June 1 |
|---|---|---|---|---|---|
| July | 23.10 | 23.51 | 23.10 | 23.43 | 22.95 |
| October | 22.70 | 23.20 | 22.70 | 23.11 | 22.46 |
| December | 22.94 | 23.37 | 22.94 | 23.27 | 22.62 |
| January | 22.50 | 22.88 | 22.47 | 22.82 | 22.23 |
| March | 22.72 | 23.13 | 22.72 | 23.06 | 22.47 |

### *TIRE FABRICS*

During the past two weeks a number of filling in orders have been placed. The business has been inclusive, accounting for combed and carded peelers and Egyptian fabrics. The larger use of belting duck in place of chafers has tended to slow down loom activity in this section.

**CORD FABRICS**

| | | | | |
|---|---|---|---|---|
| Combed Sakellarides | | Nominal | | |
| Combed Peeler | lb. | Nominal | | |
| Carded Peeler | | .50 | @ | .52 |
| Combed Egyptian uppers | lb. | .70 | @ | .75 |
| Carded Egyptian uppers | lb. | .64 | @ | .67 |

**SQUARE WOVEN**

| | | | | |
|---|---|---|---|---|
| 17¼-ounce Egyptian uppers, combed | lb. | Nominal | | |
| 17¼-ounce Egyptian uppers, carded | lb. | .62 | @ | .65 |
| 17¼-ounce Sakellarides, combed | lb. | Nominal | | |
| 17¼-ounce Peeler, carded | lb. | .49 | @ | .51 |

*Ducks*—The past two weeks was considered unsatisfactory. Some low prices were reported, and although they applied to a few of the constructions in little demand, they had their effect on the entire market.

*Burlaps* — A confident attitude has characterized the burlap market, with a few factors afraid to operate. Shipment figures for May were received by one of the local houses which showed that 96,000,000 yards had been shipped to the United States and Canada.

**SHEETINGS**

| | | | | | |
|---|---|---|---|---|---|
| 40-inch | 2.50-yard | yd. | .15¼ | @ | — |
| 40-inch | 2.85-yard | yd. | .12⅝ | @ | — |
| 40-inch | 3.15-yard | yd. | .13½ | @ | — |
| 40-inch | 3.60-yard | yd. | .10⅝ | @ | — |
| 40-inch | 3.75-yard | yd. | .09¾ | @ | — |
| 40-inch | 4.25-yard | yd. | .08¾ | @ | — |

**DUCKS**

| | | | | |
|---|---|---|---|---|
| Belting | lb. | .41 | @ | .42 |
| Hose | lb. | .41 | @ | .42 |
| Enameling | lb. | .44 | @ | .51 |
| Shoe Ducks | lb. | .42 | @ | — |
| Single filling | lb. | .19 | @ | .21 |
| Double filling | lb. | .22½ | @ | .23 |

**BURLAPS (Carload Lots)**

| | | | | | |
|---|---|---|---|---|---|
| 7½-ounce | 40-inch | 7.35 | @ | — | |
| 8 -ounce | 40-inch | 7.45 | @ | — | |
| 10 -ounce | 40-inch | 9.45 | @ | 9.50 | |
| 10½-ounce | 40-inch | 9.60 | @ | — | |


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Tire building equipment; general machine work.
**The Akron Equipment Co.**
Akron, Ohio

**FABRICS**—Tire fabrics, Egyptian—Peeler, Karded and Combed, Cord and Square.
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**Continental Rubber Co.**
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Uniformity, reliability, cleanliness.
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**RECLAIMED RUBBER**—
for all purposes.
**Rubber Regenerating Co.**
Naugatuck, Conn.

*THE MARKET PLACE Section Continued on Second Page Following.*

# Reclaimed Rubber

NEW YORK, June 15, 1925

There is a better undertone in the market, due to the interest that is being taken in reclaimed rubber as a substitute for crude, a shortage of which is imminent. All reclaimers are preparing to increase their capacity to care for increased demands. The Philadelphia Rubber Works Co., Akron is rushing work on a two story addition, with new machinery and equipment, in order to increase its output by 1,000,000 lb. a month.

| | | | |
|---|---|---|---|
| ***Friction (Uncured)*** | | | |
| No. 1 | lb. | .42 @ | .44 |
| No. 2 | | .32 @ | .34 |
| ***High Tensile Black*** | | | |
| Super-Reclaim No. 1 | lb. | .21½ @ | .22 |
| " " No. 2 | lb. | .13½ @ | .14½ |
| ***Shoe*** | | | |
| Unwashed | lb. | .09 @ | .09¼ |
| Washed | lb. | .12¼ @ | .12½ |
| ***Tube*** | | | |
| No. 1 (Floating) | lb. | .17 @ | .18 |
| No. 2 (Compounded) | lb. | .13 @ | .13½ |
| ***Tires*** | | | |
| Black unwashed | lb. | .09 @ | .09½ |
| Black, washed | lb. | .10 @ | .11 |
| Dark Gray | lb. | .10¾ @ | .11¼ |
| Light Gray | lb. | .12¾ @ | .13 |
| White | lb. | .15¾ @ | .16¼ |
| Truck | lb. | .08¾ @ | .09 |
| ***Miscellaneous*** | | | |
| Mechanical Blends | lb. | .07 @ | .08 |
| Red, High Grade | lb. | .14¾ @ | .15 |

[*Other items regarding reclaimed appear on Pages 187 and 188.—The Editor*]

# Scrap Rubber

NEW YORK, June 15, 1925

Conditions in the scrap rubber market are very much better on account of the high price of crude rubber. The expectation is that prices of crude will go even higher. Reclaimed rubber is being used to capacity in this country at present and the outlook is very bright. Dealers are holding on to stocks, awaiting better quotations. Prices show a slight improvement.

| | | | |
|---|---|---|---|
| Auto tire prelings | | .01⅛ @ | .01¼ |
| Standard White auto | ton | 24.00 @ | 25.00 |
| Mixed auto | ton | 18.00 @ | 19.00 |
| Bicycle tires | tons | 10.00 @ | 12.00 |
| Clean solid truck tires | | 34.00 @ | 36.00 |
| Boots and shoes | | .01⅝ @ | .01¾ |
| Aretics, untrimmed | | .00¾ @ | .00⅞ |
| Aretics, trimmed | | .01⅛ @ | .01¼ |
| Inner tubes, No. 1 | | .05¾ @ | .06 |
| Inner tubes, compounded | | .04 @ | .04¼ |
| Inner tubes, red | | .03 @ | .03¼ |
| Battery jars, clean hard rubber | | .01 @ | .01⅛ |
| Air Brake Hose | ton | 15.00 @ | 16.00 |
| Rubber hose | ton | 10.00 @ | 12.00 |

# Crude Rubber

NEW YORK, June 15, 1925

Brokers attribute the continued strength of the market to the demand by manufacturers who have to maintain production schedules which are running at a high rate. Recent cables from London indicate strong efforts on the part of leading manufacturers to lift restriction. Parliament was unsuccessfully petitioned to meet the request to insure a more stable market through heavier shipments.

The market has been very firm during the past two weeks, with sellers unwilling to do anything which might be interpreted as showing anxiety to sell. They are confident of still higher prices in the near future and are prepared to take advantage of any show of interest on the part of buyers. Although the market has been firm, it has been very dull with little of interest transpiring from day to day. Both buyers and sellers were reluctant to operate on a substantial scale in any position.

More interest has been displayed in Paras and Centrals than has been the case recently. Shortage of plantations has led to some heavy buying of other grades. The New York market has been working more independently of London of late than is usually the case.

Factories have been buyers of moderate quantities needed for current production. Dealers have not been buying except those with shorts to cover and they were interested in bearing the market. Not much interest was shown in distant positions.

It is believed that arrivals for the month will total around 22,000 tons. This would be quite a decline from the arrivals of recent months, and with no decrease in production, there is the possibility of some real high prices before the expiration of the present month.

Browns, which have been weak, were recently bolstered up to some extent, although not much buying interest was evidenced in them.

The market was dull and somewhat easier today. Prices on ribs and latex showed declines and there appeared to be no buying interest of consequence from any quarter. A slight increase of 175 tons in London stocks after some months of steadily declining supplies indicated a change in the relation of deliveries to receipts and as such will have a considerable effect upon the market position. Present stocks are 5,630 tons.

## NEW YORK MARKET

| | | | |
|---|---|---|---|
| ***Plantations—*** | | | |
| Ribbed Smoked Sheets | | | |
| Spot | .72½ @ | | — |
| June | .72 @ | | — |
| July | .70½ @ | | — |
| August | .65 @ | | — |
| September | .64 @ | | — |
| July-Sept. | .65½ @ | | — |
| August-September | .64½ @ | | — |
| July-December | .60 @ | | — |
| Oct.-Dec. | .55½ @ | | — |
| January-March | .52 @ | | — |
| First Latex, crepe spot | .70½ @ | | — |
| Amber Crepe, No. 1, spot | .70½ @ | | — |
| " " No. 2, | .70¼ @ | | — |
| " " No. 3, | .70 @ | | — |
| Brown Crepe, Rolled | .65 @ | | — |
| " " Clean, thin | .68 @ | | — |
| " " Specky | .68 @ | | — |
| Scrap, Colombo No. 1 | Nominal | | |
| ***Pontianac—*** | | | |
| Bangermassin | Nominal | | |
| Palembang | Nominal | | |
| Prime Pressed | Nominal | | |
| Sarawak | Nominal | | |
| ***Paras—*** | | | |
| Up-river Fine | .65 @ | | — |
| " Medium | .56 @ | | — |
| " Coarse | .49 @ | | — |
| Islands, fine | .58 @ | | — |
| Madeira Fne | .65½ @ | | — |
| Acre Bolivian, fine | .65 @ | | — |
| Tapajos, fine | .61 @ | | — |
| Cut Beni Bolivian, fine | Nominal | | |
| ***Caucho Ball—*** | | | |
| Upper, shipment | .51 @ | | — |
| ***Centrals—*** | | | |
| Central, scrap, prime | .51¾ @ | | — |
| Corinto, scrap | .52 @ | | — |
| Esmeraldo, sausage | .52 @ | | — |
| Guayule, w and d | .42 @ | | — |
| ***Africans—*** | | | |
| Benguela, No. 2 | Nominal | | |
| Congo, upper, black | Nominal | | |
| " " red | Nominal | | |
| Kassai, Prime Red | Nominal | | |
| ***Balata—*** | | | |
| Block, Columbia | .65 @ | | — |
| " Cuidad | .65 @ | | — |
| Surinam, sheet | .85 @ | | — |
| ***Gutta Percha—*** | | | |
| Siak | .17 @ | | .18 |
| Red Macassar | 3.00 @ | | 3.20 |
| ***Chicle—*** | | | |
| Mexican, Yucatan | .65 @ | | — |

## LONDON MARKET

| | |
|---|---|
| Standard Ribbed Smoked Sheets— | |
| Spot | 36¼d |
| June | 36½ |
| July-September | 31½ |
| Oct.-December | 27½ |

## SINGAPORE MARKET

| | |
|---|---|
| Standard Ribbed Smoked Sheets— | |
| Spot | 31¼d |
| July | 30¾ |
| August-Sept. | 28½ |
| Oct.-December | 26 |

J. H. LANE & CO.

Tire Fabrics Cord Fabrics

Enameling Duck Drill Sheeting

Osnaburg and Special Constructions

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A standardized grade for every requirement.
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**SOLVENT RECOVERY EQUIPMENT**
50 to 90 Per Cent Recovery
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*Exclusive Selling Agents for*
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**TIRE BUILDING EQUIPMENT**
**MOLDS & CORES**
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For Heels, Soles and Mechanical Rubber Goods.
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For cutting all rubber, composition and plain or impregnated fabrics.
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**Always Buying and Selling**
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Brooklyn, N. Y.

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All grades for the rubber manufacturer.
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manufactured from *Genuine English Chalk* and *Cliffstone*—no adulterations.
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**The New Jersey Zinc Sales Company**
New York Pittsburgh Chicago
Cleveland San Francisco

# CHEMICALS & COMPOUNDING INGREDIENTS

## Accelerators — Colors — M.R. — Compounding Ingredients Softeners — Vulcanizing Ingredients — Rubber Substitutes

**New York, June 16, 1925—Trading ran on steadily during the past two weeks and because there were no signs of a warm-weather slump, prices, in a few cases, strengthened a little. Although it is expected that demand will soon fall off, stocks of most chemicals are not excessive and for this reason there has been a measure of steadiness in the market that has been lacking in other years at this time.**

### ACCELERATORS

| | | | | |
|---|---|---|---|---|
| ***Organic*** | | | | |
| Aldehyde ammonia, crystals | lb. | $ .92 | @ | .93 |
| Aniline oil, drums | lb. | .17 | @ | .17½ |
| Di-Ortho-Tolylguanidine | lb. | 1.10 | @ | 1.13 |
| Diphenylguanidine | lb. | .95 | @ | .98 |
| Ethylidene aniline | lb. | .65 | @ | — |
| Excellerex | lb. | .40 | @ | .45 |
| Formaldehyde-Aniline | lb. | .40 | @ | .42½ |
| Hexamethylene-tetramine | lb. | .82½ | @ | — |
| Paraphenylenediamine | lb. | 1.25 | @ | 1.30 |
| Piperidine-Piperidyldithio-Carbamate | lb. | 5.00 | @ | — |
| Super-Sulphur No. 1 | lb. | .50 | @ | — |
| Super-Sulphur No. 2 | lb. | .18 | @ | .30 |
| Tensilac, No. 39 | lb. | .70 | @ | — |
| No. 40 | lb. | .65 | @ | — |
| Tuads | lb. | 4.50 | @ | 6.00 |
| Thiocarbanilide, kegs | lb. | .26 | @ | .30 |
| Triphenylguanidine | lb. | .75 | @ | — |
| Vulcone | lb. | .75 | @ | .79 |
| Zimate | lb. | 5.00 | @ | — |
| ***Inorganic*** | | | | |
| Lead, sublimed blue | lb. | .10 | @ | .11 |
| Lead, white | lb. | .10¾ | @ | — |
| Litharge, domestic | lb. | .11¼ | @ | — |
| Lime, superfine | lb. | .01½ | @ | .02 |
| Magnesia, calcined, light | lb. | .24 | @ | .25 |
| extra light | lb. | .40 | @ | .45 |
| heavy | lb. | .03½ | @ | .06 |

### COLORS

| | | | | |
|---|---|---|---|---|
| ***Blacks*** | | | | |
| Arrow "Aerfloted" | lb. | .07 | @ | .11 |
| Bone Black | lb. | .05½ | @ | .09 |
| Carbon " | lb. | .07 | @ | .11 |
| Drop " | lb. | .06 | @ | .14 |
| Ivory " | lb. | .12 | @ | .45 |
| Lamp " | lb. | .12 | @ | .40 |
| Micronex | lb. | .08 | @ | .12 |
| Thermatomic carbon | lb. | .04 | @ | .08 |
| ***Blues*** | | | | |
| Cobalt | lb. | .21 | @ | .26 |
| Prussian | lb. | .35 | @ | .37 |
| Ultramarine | lb. | .08 | @ | .35 |
| ***Browns*** | | | | |
| Iron oxide | lb. | .02¼ | @ | .06¼ |
| Sienna, Italian | lb. | .04 | @ | .14 |
| Umber, Turkey | lb. | .04 | @ | .06 |
| Vandyke, domestic | lb. | .03 | @ | .03½ |
| ***Greens*** | | | | |
| Chrome, light | lb. | .29 | @ | .30 |
| medium | lb. | .30 | @ | .31 |
| dark | lb. | .32 | @ | .34 |
| commercial | lb. | .10 | @ | .10½ |
| Chromium Oxide, bbl. | lb. | .37 | @ | .39 |
| ***Reds*** | | | | |
| Antimony crimson, 15/17 F.S. | lb. | .43 | @ | .45 |
| sulphur free | lb. | .45 | @ | — |
| golden, 15/17 F.S. | lb. | .17 | @ | — |
| pentasulphide, pure, | lb. | .35 | @ | .38 |
| 15/17 F.S. | lb. | .33 | @ | .36 |
| red sulph. 15-17 F.S. | lb. | .16 | @ | .20 |
| Indian English | lb. | .11 | @ | .15 |
| Oximony | lb. | .13½ | @ | — |
| Para toner | lb. | .90 | @ | 1.00 |
| commercial | lb. | .13½ | @ | .14½ |
| Red oxide, reduced | lb. | .04 | @ | .12 |
| pure | lb. | .12 | @ | .14 |
| Toluidine toner | lb. | 1.80 | @ | 2.05 |
| Venetian red | lb. | .01½ | @ | .05 |
| Vermillion, quicksilver, English | lb. | 1.45 | @ | 1.50 |
| domestic | lb. | .15 | @ | .25 |
| ***Whites*** | | | | |
| Albalith | lb. | .06⅜ | @ | .06⅝ |
| Aluminum bronze | | .60 | @ | 1.25 |
| Lithopone, Akcolith | lb. | .06 | @ | .06½ |
| Lithopone Azolith | lb. | .06½ | @ | .06⅝ |
| Zinc Oxide—American Process XX red | lb. | .07¾ | @ | .08½ |
| Kadox, black label, bags, cars | | .10⅝ | @ | .11⅛ |
| blue " " " | | .09⅝ | @ | .10⅛ |
| red " " " | | .08⅝ | @ | .09⅛ |
| American Azo: ZZZ (lead free) | lb. | .07¾ | @ | .08¼ |
| ZZ (under 5% leaded) | lb. | .07 | @ | .07½ |
| Z (8-10% leaded) | lb. | .06¾ | @ | .07¼ |
| Zinc Oxide—French Process White seal | lb. | .12 | @ | — |
| Green seal | lb. | .10¾ | @ | — |
| Red seal | lb. | .09¾ | @ | — |
| ***Yellows*** | | | | |
| Chrome, light | | .18 | @ | .18½ |
| dark and medium | lb. | .18 | @ | .18½ |
| Cadmium Sulphide | lb. | 2.00 | @ | 2.50 |
| Ocher, French medium | lb. | .03 | @ | .03½ |
| domestic | lb. | .01½ | @ | .02½ |

### COMPOUNDING INGREDIENTS

| | | | | |
|---|---|---|---|---|
| Aluminum Flake (f.o.b. plant) | ton | 21.85 | @ | 24.50 |
| hydrate light | lb. | .17 | @ | .18 |
| Ammonia carbonate | lb. | .12 | @ | .13½ |
| Asbestine | ton | 18.00 | @ | 20.00 |
| Barium carbonate | ton | 54.00 | @ | 56.00 |
| Barium Dust | lb. | .05 | @ | .06 |
| Barytes southern off-color, | ton | 12.00 | @ | 18.00 |
| Western prime white | ton | 22.00 | @ | 23.00 |
| imported | ton | 28.00 | @ | 35.00 |
| Basofor | lb. | .04½ | @ | — |
| Blanc fixe, dry f.o.b. works | lb. | .04 | @ | .04¼ |
| Carrara filler | lb. | .01¾ | @ | .02 |
| Chalk, precip., extra light | lb. | .04¼ | @ | .05 |
| heavy | lb. | .03¼ | @ | .04 |
| Clay, China, domestic | ton | 15.00 | @ | 25.00 |
| Catalpo (fact.) | ton | 35.00 | @ | 40.00 |
| Dixie | ton | 20.00 | @ | 35.00 |
| Blue Ridge, Dark | ton | 9.00 | @ | — |
| " " Light | ton | 12.00 | @ | — |
| Langford | ton | 12.00 | @ | 22.00 |
| Glues, extra white | lb. | .21 | @ | .29 |
| medium white | lb. | .18 | @ | .24 |
| cabinet | lb. | .15 | @ | .23 |
| cabinet low grade | lb. | .14 | @ | .17 |
| common bone | lb. | .11 | @ | .14 |
| Graphite flake, bbls. | lb. | .06½ | @ | .12 |
| Lump | lb. | .04 | @ | .07 |
| Infusorial earth, powdered | ton | 23.00 | @ | 25.00 |
| bolted | ton | 15.00 | @ | 20.00 |
| Liquid latex | gal. | 2.50 | @ | — |
| Magnesia, carbonate | lb. | .08¼ | @ | .09 |
| Mica, powdered | ton | 65.00 | @ | 80.00 |
| Rotton Stone (powdered) | lb. | .02½ | @ | .04½ |
| Soapstone, powdered | ton | 15.00 | @ | 22.00 |
| Starch, powdered | cwt. | 4.07 | @ | 4.55 |
| Talc, domestic | ton | 16.00 | @ | 18.00 |
| Terra Alba | cwt. | 1.25 | @ | 2.00 |
| Tripoli, white | lb. | .02 | @ | .02¼ |
| Whiting, commercial | cwt. | 1.00 | @ | 1.15 |
| gilder's bolted | cwt. | 1.25 | @ | 1.35 |
| English cliffstone | cwt. | 1.50 | @ | — |
| Paris white American | cwt. | 1.25 | @ | 1.50 |
| Quaker | ton | 13.00 | @ | 15.00 |
| Sussex | ton | 8.00 | @ | 10.00 |
| Wood pulp XXX | ton | 35.00 | @ | — |
| " " X | ton | 25.00 | @ | — |

### MINERAL RUBBER

| | | | | |
|---|---|---|---|---|
| Genasco (factory) | ton | 50.00 | @ | 52.00 |
| Granulated M.R. | ton | 35.00 | @ | 45.00 |
| Hydrocarbon, Hard | ton | 29.00 | @ | 35.00 |
| Hydrocarbon, Soft | ton | 29.00 | @ | 35.00 |
| 320/340 M.P. hydrocarbon (c. l. factory) | ton | 47.00 | @ | 52.00 |
| 300/310 M.P. hydro-carbon (c. l. factory) | ton | 42.00 | @ | 47.00 |
| Synpro, granulated, M.R. (factory) | ton | 55.00 | @ | 70.00 |

### SOFTENERS

| | | | | |
|---|---|---|---|---|
| ***Acids*** | | | | |
| Acetic, 28% | cwt. | 3.00 | @ | 3.25 |
| Cresylic, 97% | gal. | .60 | @ | .64 |
| 95% | | .57 | @ | .60 |
| Muriatic, 20% | cwt. | .90 | @ | 1.00 |
| Nitric, 36 degrees | cwt. | 4.25 | @ | 4.50 |
| Sulphuric, 60 degrees | ton | 10.00 | @ | 11.00 |
| 66 degrees | ton | 14.00 | @ | 15.00 |
| Tartaric, crystals | lb. | .29 | @ | — |
| ***Alkalies*** | | | | |
| Caustic soda, 76% | cwt. | 3.60 | @ | — |
| Soda ash, 58% C.L. | cwt. | 1.43 | @ | 1.45½ |
| ***Oils*** | | | | |
| Castor, No. 3, bbls. | lb. | .16 | @ | — |
| Chinawood, bbls. | lb. | .13½ | @ | — |
| Corn, crude, bbls. | lb. | .11½ | @ | — |
| refined | lb. | .12½ | @ | — |
| Cootonseed, crude | | .09¾ | @ | — |
| Glycerine C.P. drums | lb. | .19 | @ | .19½ |
| Linseed, RawC.L.bbl. | gal. | 1.02 | @ | — |
| Palm, Niger | lb. | .09¼ | @ | — |
| Lagos | lb. | .09¼ | @ | — |
| Peanut, domestic, crude | lb. | .13 | @ | — |
| Petrolatum, white | | .12 | @ | .12¼ |
| amber | | .03⅞ | @ | .04 |
| dark amber | lb. | .03⅝ | @ | .03¾ |
| Pine, steam distilled | lb. | .65 | @ | .66 |
| Rapeseed, refined | gal. | 1.00 | @ | — |
| blown | gal. | 1.05 | @ | — |
| Rosin, first rectified | gal. | .58 | @ | .60 |
| second rectified | gal. | .61 | @ | .63 |
| Soya Bean, crude | | .13¼ | @ | .13½ |
| Tar, commercial | gal. | .30 | @ | .32 |
| ***Resins and Pitches*** | | | | |
| Parra M.R. | lb. | .06 | @ | .07 |
| Tar Retort | bbl. | 14.00 | @ | — |
| kiln burned | bbl. | 14.00 | @ | — |
| Pitch, Burgundy | lb. | .05 | @ | .06½ |
| coal tar | gal. | .05½ | @ | .06 |
| pine | bbl. | 6.00 | @ | 6.50 |
| Rosin, grade K | bbl. | 10.80 | @ | — |
| Shellac, Superfine, orange | lb. | .58 | @ | .59 |
| ***Solvents*** | | | | |
| Alcohol, denatured, No. 1 bbls. | gal. | .57½ | @ | .61½ |
| Benzol, 90% | gal. | .21 | @ | — |
| pure | | .23 | @ | — |
| Carbon bisulphide | lb. | .05½ | @ | .06½ |
| tetrachloride | lb. | .06¾ | @ | .07½ |
| Dimethylaniline | lb. | .48 | @ | .50 |
| Motor gasoline, steel bbls. | gal. | .21 | @ | — |
| Naptha, V. M. & P. | gal. | .19¼ | @ | — |
| Toluene | gal. | .26 | @ | — |
| Turpentine, spirits | gal. | 1.01 | @ | 1.02 |
| wood | gal. | .85 | @ | .90 |
| ***Waxes*** | | | | |
| Bayberry | lb. | .21 | @ | .22 |
| Beeswax | lb. | .55 | @ | .65 |
| Carnauba, No. 1 | lb. | .38 | @ | .40 |
| Ceresin, white | lb. | .10 | @ | .11 |
| Montan, crude | lb. | .06 | @ | .06½ |
| Ozokerite, black | lb. | .24 | @ | .25 |
| green | lb. | .26 | @ | .30 |
| ParaffineWhite, A.M.P. | lb. | .05¼ | @ | .05¼ |
| Yellow A.M.P. | lb. | .05⅜ | @ | .05½ |
| Sweet wax | lb. | .12 | @ | — |

### SUBSTITUTES

| | | | | |
|---|---|---|---|---|
| Black | lb. | .08 | @ | .15 |
| White | lb. | .09½ | @ | .16½ |
| Brown | lb. | .10 | @ | .15 |
| Brown factice | lb. | .09 | @ | .18 |
| White factice | lb. | .09½ | @ | .16½ |

### VULCANIZING INGREDIENTS

| | | | | |
|---|---|---|---|---|
| Black hyposulphite | lb. | .18 | @ | .20 |
| Ethyl Chloride, Cyl. | lb. | .55 | @ | — |
| " " Drums | lb. | .45 | @ | — |
| Sulphur Chloride (drums) | lb. | .04½ | @ | .06 |
| Sulphur flour | | | | |
| Commercial bags | cwt. | 1.35 | @ | 1.70 |
| " bbls. | cwt. | 1.70 | @ | — |
| Superfine, bags | cwt. | 2.20 | @ | 2.50 |
| " bbls. | cwt. | 2.60 | @ | 2.90 |
| 100% pure, refined, bags | cwt. | 2.35 | @ | 2.65 |
| bbls. | cwt. | 2.60 | @ | 2.90 |

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# EDITOR'S REVIEW DESK

(*Continued from Page 206*)

he was sent to Detroit to demonstrate the rubber-tired vehicle. Realizing the possibilities in this type of tire, he interested two others and a plant was started in Chicago. This was replaced by a $10,000 firm and after a few years the young men sold their business for $250,000 each. At this point the carriage tire department was acquired, operations beginning with 12 workmen, one clerk and a bookkeeper. Today the Firestone Tire & Rubber Co. employes 12,000 persons. Ability to finish a job, a recognition that pluck determines success and an enduring faith and service are some of the precepts that Mr. Firestone recommends to those who desire to succeed in any line of endeavor.

* * *

RESTRICTION UNDER FIRE. Published in *The Rubber Quarterly*, London, May 15.

Viewing the past quarter as the most favorable for the rubber market since the institution of the Stevenson Plan, the authors of this article look toward the next three months with optimism in the belief that producers in the restricted areas will obtain the benefit of a full 10 per cent return. Although British production still falls short of standard by 35 per cent, it is thought that present conditions approximate fairly close to the ideal held by the framers of the scheme.

The opinion voiced by American manufacturers that restriction has forced up prices so as to menace the progress and development of highway transportation is discounted here by the fact that the average London price of rubber in the first twelve months of restriction was but 1s. 3.075d., and in the second twelve months 1s. 1.170d., and that the present price still falls short of the 1913 level, while most other commodities are selling at something like 70 per cent above pre-war figure.

Critics of the plan within the British Empire fear that with stock short and supplies artificially controlled the position is dangerous to any manufacturer who desires to build his program for the future. The defenders of the system, however, contend that all forward contracts being based on a forecast of the market, there is a point at which producers think it worth while to sell forward and that many have, in fact, already sold heavily for shipment through 1925 and 1926.

* * *

THE TIRE AS PART OF THE SUSPENSION SYSTEM. By A. Healey. 75 pp. Illustrated. Published by The Institution of Automobile Engineers, London.

The data provided in this paper should prove of great interest to the chassis division of the automobile industry. The ability of tires to save the vehicle from shock, rates of deflection of tires under load and road gripping and damping characteristics are some of the points discussed. In analyzing the causes of discomfort to passengers, graphs are furnished on softer tires, reduced unsprung weight and stiffness of springs. A section is also devoted to a discussion of pitching of chassis, critical speeds and relative problems.

* * *

BALLOON VERSUS HARD TIRES. By Wilfred Gordon Aston. Published in *The Autocar*, Jan. 16.

A series of tests, the results of which were recorded by means of photographs, to determine the influence of varying sprung and unsprung weights, speeds, road equalities and other phenomena are touched upon, and an analysis of the method, first used by the author of this article, to record these facts photographically is given. In the main the article is a discussion of comparative tests made with a view of securing data on the difference between the riding qualities of low pressure and hard pressure tires, using the method mentioned.

GOODRICH MECHANICAL RUBBER GOODS. Issued by the B. F. Goodrich Rubber Co., Akron, Ohio. 6½″ x 9¼″. Loose leaf catalog, bound in blue cloth.

This attractive catalog is made up of individual sections, so arranged that each is a unit, dealing with a separate product or closely related products, so that one section may be used alone on a particular subject. The sections are numbered with a key, so that when arranged in numerical order the subjects easily fall into their proper sequence. The section is numbered at the bottom of each page and also at the top of each section. Additional sections will be issued from time to time, punched for insertion in this binder.

The sections included in the present issue deal with the Commander, the 1788, Marathon and Drives-All transmission belts, as well as the conveyor, elevator and grain belts which this company manufactures. Each type of belt is illustrated and explained and tables of width, ply feet and prices are given.

* * *

EFFECTS OF BALLOON TIRES ON CAR DESIGN. By J. W. White, Chief Engineer, Disc Wheel Div., Wire Wheel Corporation of America, Buffalo,. Published in the *Journal of the Society of Automotive Engineers* for February.

Inasmuch as the use of low-pressure tires has become established, the conditions of car design affected by them are reviewed, particular reference being had to the members of the chassis included under the term unsprung weight, namely, the axles, the wheels and the tires.

Referring to the principles that underlie basic design, the author first investigates the effect on the steering of such changes and compromises from the perfect structure as failure of the king-pin to coincide with the verticle load-plane, the inclination of the king-pin toward the wheel, or the wheel toward the king-pin, or both, and the giving of a toe-in to the front wheels. Further modifications have served to reduce the car shock, to add to the strength of all the parts by increasing the dimensions, to improve the spring-suspension, and to reduce the car weight per passenger. But four things remain to be done, namely, to stop the angular rotation of the axle because of the flexing of the springs, to eliminate backlash in the steering linkage, to construct a positive-steering mechanism that will be absolutely neutral, and to divorce the steering mechanism from all influences except those that occur from the road.

In the opinion of the author, all these objectives can be reached, but then looms prominently the question of lateral stability. This is to be expected unless the width of the rim is increased. In high-pressure tires the normal ratio of the width of the rim to that of the tire is about 62 per cent, but ratios of from 50 to 55 per cent are common. Lack of lateral stability has amplified the errors of present design until a point has been reached at which shimmying has become prevalent.

By studying the footprints of tires, it is found that the side-slip per revolution is 60 per cent greater with balloon tires than with high-pressure tires. As the forward rake of the king-pin exerts a leverage that tends to turn the wheels still farther in the same direction, these two forces are said to be sufficient to cause shimmying even though the geometry of the steering mechanism were neglected.

The conclusion reached is that, in order to avoid shimmying all backlash must be taken out of the steering-mechanism, and that, so far as possible, all rake of the king-pin outward leading of the wheels, and toe-in should be eliminated. The introduction of an hydraulic steering-gear is suggested as a means of accomplishing these results.